

The background of the cover is a composite image. The left side shows an aerial view of a multi-lane road with a modern building featuring a white, grid-like facade in the background. The right side shows a blurred aerial view of a highway with multiple lanes of traffic moving away from the viewer. The entire image is overlaid with several blue geometric shapes, including a large diamond and several horizontal bars.

Road Safety Plan

2021–2023



CONTENTS

1.INTRODUCTION	2
ROAD SAFETY TARGETS 2010–2020.....	2
EUROPEAN ROAD SAFETY TARGETS 2021–2030.....	4
2.KEY ACCIDENT STATISTICS	5
ACCIDENT STATISTICS FOR 2019	5
CONCLUSIONS.....	39
ACCIDENT STATISTICS FOR 2020	44
3.ROAD SAFETY STRATEGY 2021–2030	50
4.TARGETS OF THE ROAD SAFETY PLAN 2021–2023	52
5.ACTIONS OF THE ROAD SAFETY PLAN 2021–2023	53
ACTIONS OF THE PSV 2021–2023.....	54
ACTIONS OF THE PSV SORTED BY THEME.....	94
6.ANEX	109
ACTIONS OF THE INTELLIGENT TRANSPORT (ITS) SYSTEM	109

1. INTRODUCTION

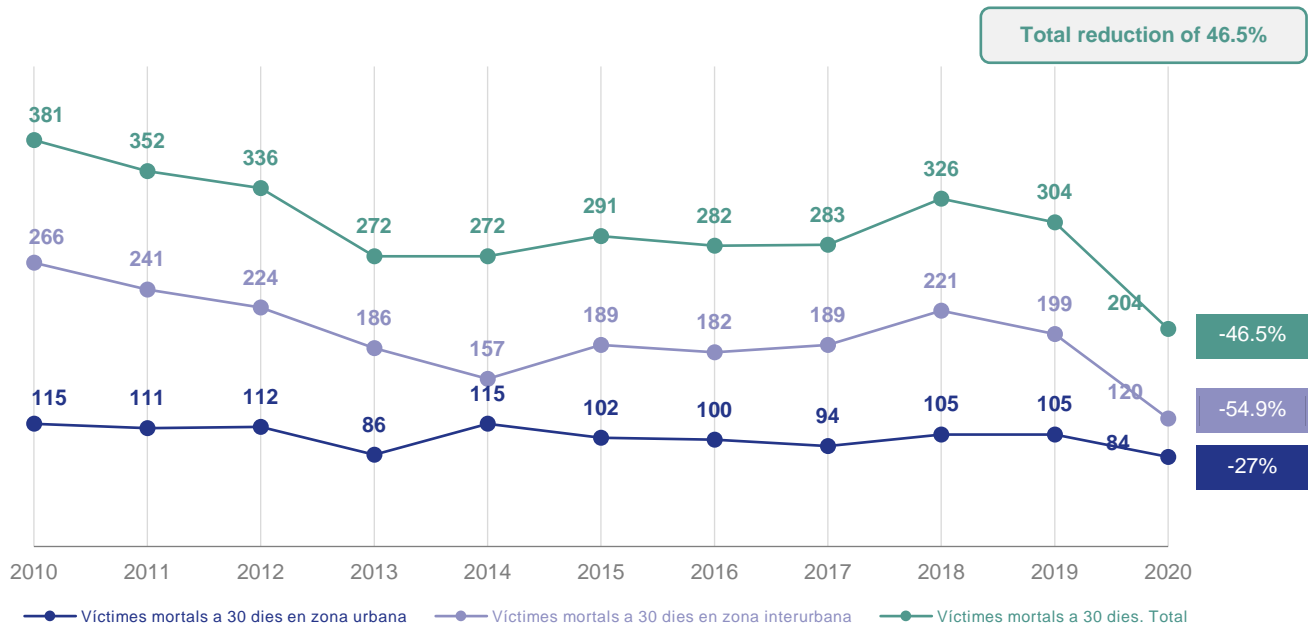
ROAD SAFETY TARGETS 2010–2020

Between 2000–2010, the main road safety target set by the European Union was to reduce fatalities within 30 days of the accident by 50%. For the decade between 2010–2020, the European Road Safety Action Programme set the same target of reducing fatalities by 50% for 2020 compared with 2010.

Although fatalities in Catalonia significantly decreased during the first few years of the decade of 2010–2020, since 2015, an uptick has been observed, followed by a plateauing of the downward trend that had been noted so far. Nevertheless, in 2019, fatalities fell compared with the previous year and the downward trend recorded in the years prior to 2015 was back.

In 2019, compared with the figures for 2010, the decrease in fatalities within 30 days of the accident was 25.2% for interurban areas and 8.7% for urban areas. Therefore, it's clear that the decrease in interurban areas was much more significant than in urban areas.

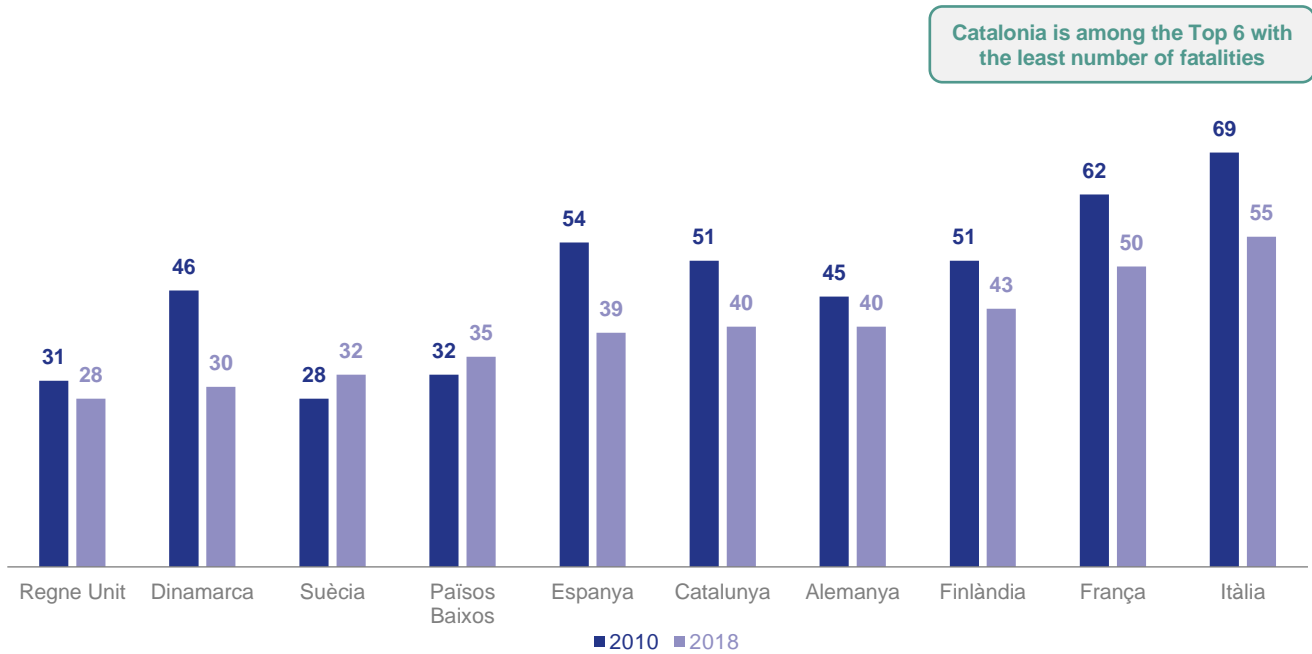
Trend in fatalities within 30 days of the accident, interurban and urban networks. Catalonia. 2010–2020



Looking at the data for 2020 – an atypical year characterised by restrictions on mobility as a result of the COVID-19 pandemic – there was an even sharper drop in fatalities compared with 2010 of 46.5%, with a significant reduction in interurban areas (-54.9%) and one to a lesser degree in urban areas (-27%).

Within the context of Europe, according to the latest data available from 2018, Catalonia is well below the European average for fatalities within 30 days of the accident. Between 2010 and 2018, Catalonia achieved an improvement in road casualty data, going from 51 to 40 fatalities/1,000,000 inhabitants – a figure that's below that of countries such as Finland, France and Italy, with levels similar to those of Germany.

Trend in deaths / 1,000,000 inhabitants from road traffic accidents in the European Union (fatalities within 30 days of the accident) among the main countries of reference



Source: CARE (Community database on Accidents on the Roads in Europe)

EUROPEAN ROAD SAFETY TARGETS 2021–2030

At the turn of the decade, the European Commission launched the EU Road Safety Policy Framework 2021–2030, with the aim of reinforcing the ambitious long-term goal of **moving as close as possible to zero fatalities in road transport by 2050 (Vision Zero)**, that is, no fatalities or lifelong injuries.

This renewed framework – in accordance with the conclusions already reached in the Valletta Declaration 2017 and the Stockholm Declaration of 2020 and despite the distortionary effects that the COVID-19 health crisis that started in 2020 may have on the cumulative trend – sets medium-term road safety targets of reducing the number of fatalities by 50% between 2020 and 2030, as well as reducing the number of seriously injured casualties by 50% for the same period.

The Catalan Traffic Service, which always adheres to the European Union's road safety guidelines, also took into account the United Nations General Assembly Resolution of 2016, which underlined the urgency of improving global road safety to meet the targets related to the Sustainable Development Goals by 2030, and the United Nations General Assembly Resolution of 2020, which declared **2021–2030 as the Second Decade of Action for Road Safety with the target of reducing fatalities by 50%**, in the deployment of its policies for the coming years.

In Catalonia, in line with the European targets set, the **National Pact for Safe and Sustainable Mobility (PNMSS) 2021–2030** was deployed as the strategic plan for road safety and sustainable mobility for the next decade. It includes strategic goals and focus areas that have been defined for safe, sustainable, automated and connected mobility. This Road Safety Plan (PSV) 2021–2023, which is released every three years, is based on these.



Victimes mortals





2. KEY ACCIDENT STATISTICS

ACCIDENT STATISTICS FOR 2019

Below is a number of accident statistics for 2019. The aim is to highlight the milestones reached and the challenges that remain, as well as detecting aspects that merit particular attention and the high-risk groups in terms of mobility. They will serve as a reference to guide the actions to be implemented, which have been defined in this Plan for safer and more sustainable mobility. The data from 2019 will be compared with the data from 2010, in order to analyse the trend in accident rates during the decade in question.

The accident statistics dealt with in detail in this section are those for 2019. Accident statistics in 2020 will be discussed in another section as it was an uncommon year and not at all representative in terms of the accident rates and mobility given the effects of the COVID-19 pandemic and the resulting restrictions placed on mobility, with the subsequent changes in mobility patterns.

Trend in accident rates

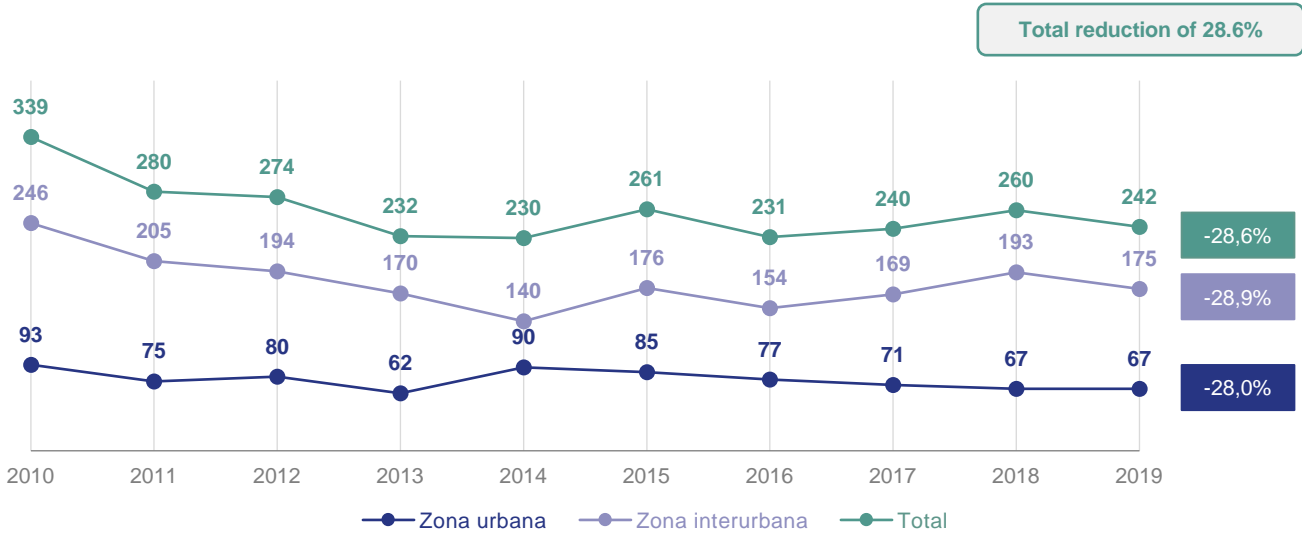
Fatalities within 24 hours

The Catalan road network recorded a total of 242 fatalities within 24 hours in 2019: 175 in the interurban road network and 67 on urban roads. Compared with 2010, fatalities within 24 hours decreased by 28.6%.

In interurban areas, fatalities decreased after increasing in 2018. For the 2010–2019 period, the figures decreased by 28.9% – well below the 45% target set for 2019, in comparison with the targets set in Catalonia’s Strategic Road Safety Plan 2014–2020.

In urban areas, the number of fatalities within 24 hours remained constant compared with the previous year, with a decrease by 28% against 2010, which was also below the targets set.

Trend in the number of fatalities within 24 hours. 2010–2019

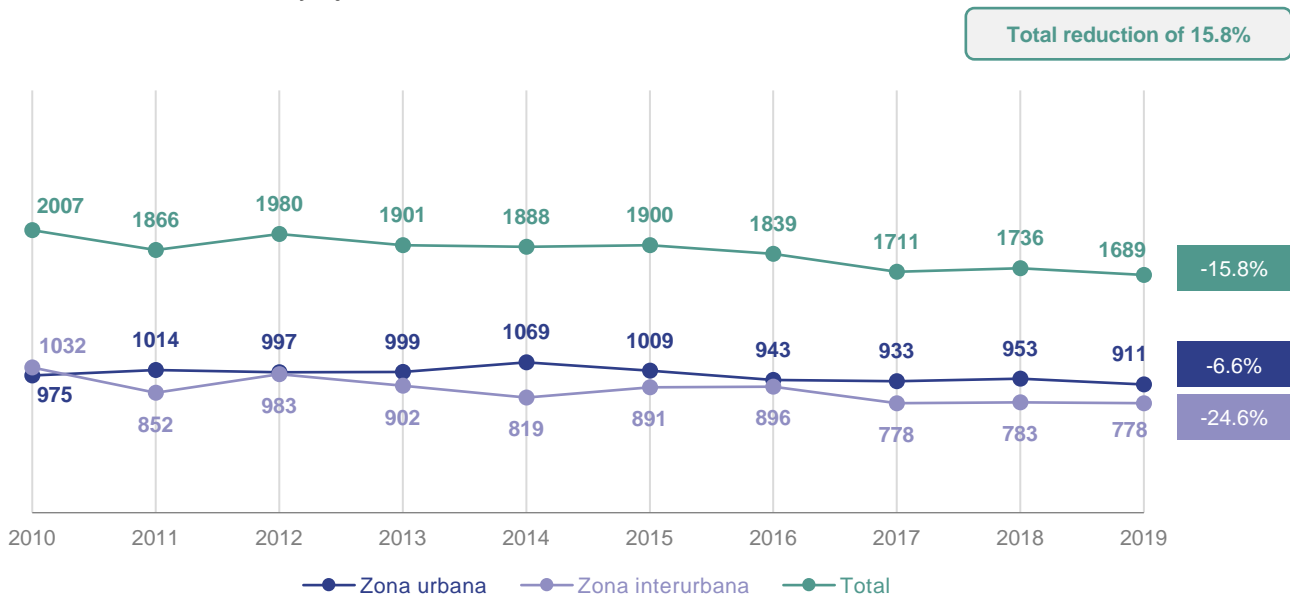


Seriously injured casualties

The European Union set the target of a 40% reduction in seriously injured casualties in road traffic accidents by 2020. In the Catalan road network, 1,689 seriously injured casualties (778 in interurban areas and 911 in urban areas) were recorded in 2019.

Compared with 2010, **this meant a 15.8% reduction**. The figure actually decreased by 24.6% in interurban areas, although it only decreased by 6.6% in urban areas. Despite the figure for urban areas, a continuing downward trend has been observed since 2014, when the highest number of seriously injured casualties (1,069) was recorded. Variability for the 2014–2019 period was almost -14.7%.

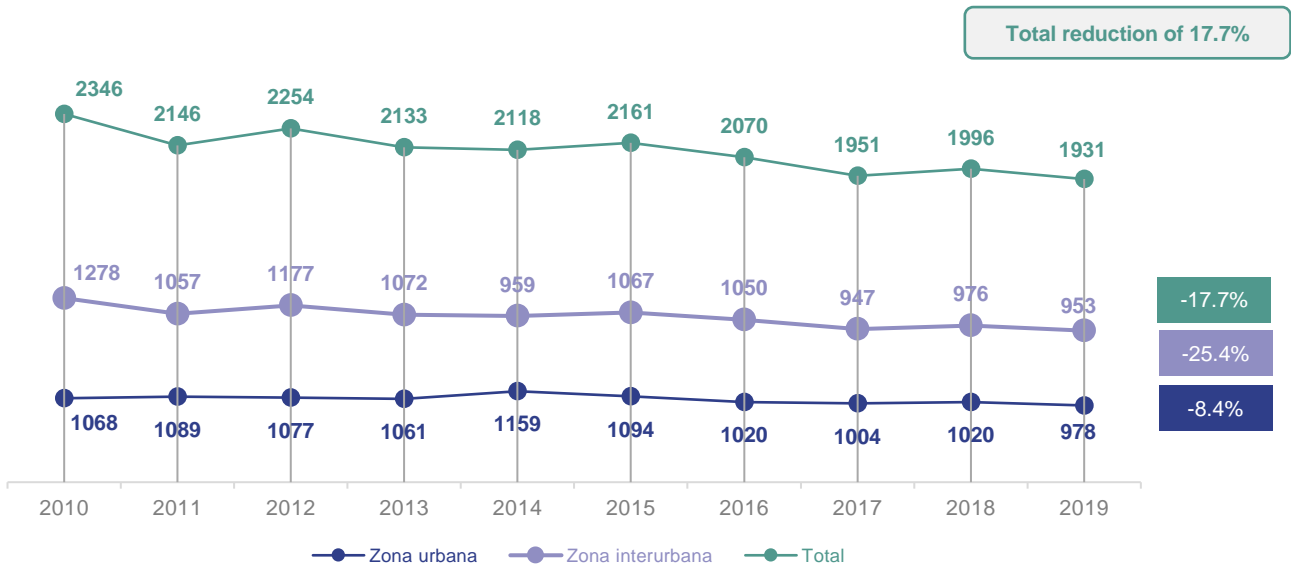
Trend in the number of seriously injured casualties. 2010–2019



Fatalities within 24 hours and seriously injured casualties

When adding the number of fatalities within 24 hours and seriously injured casualties, trends similar to those of seriously injured casualties were observed, with slight decreases in urban areas (-8.4%) and more considerable ones in interurban areas (-25.4%) compared with 2010.

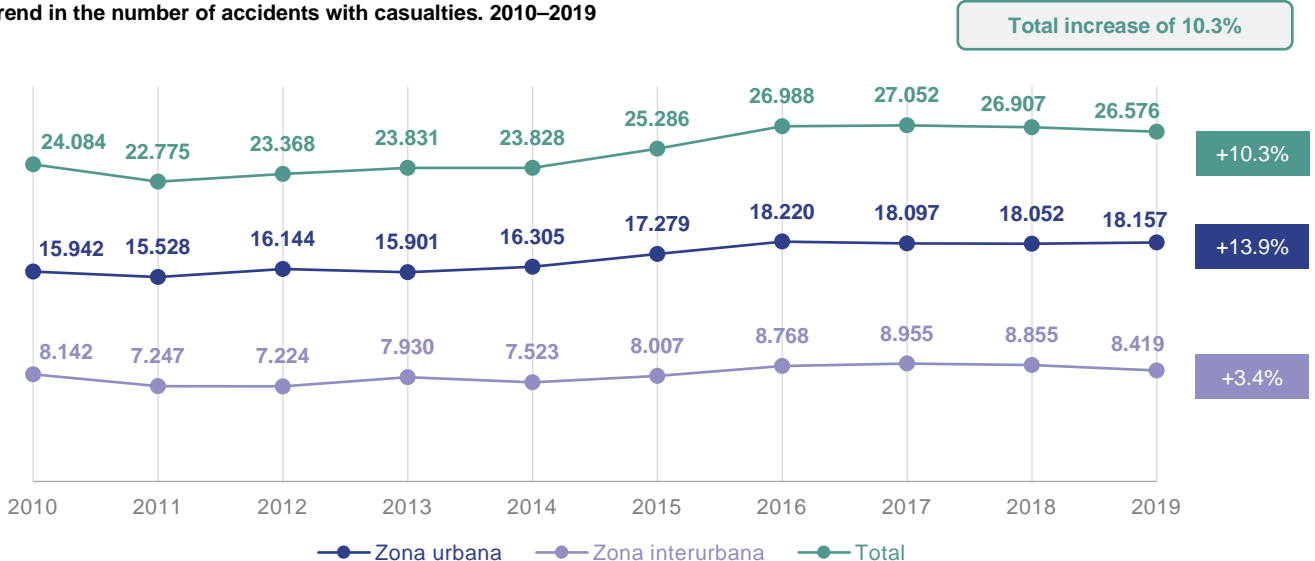
Trend in the number of fatalities within 24 hours and seriously injured casualties. 2010–2019



Accidents with casualties

The number of road traffic accidents with casualties has largely remained the same over the past few years, but there was a 10.3% increase when 2019 was compared with 2010. More than twice as many accidents occurred in urban areas as against interurban areas.

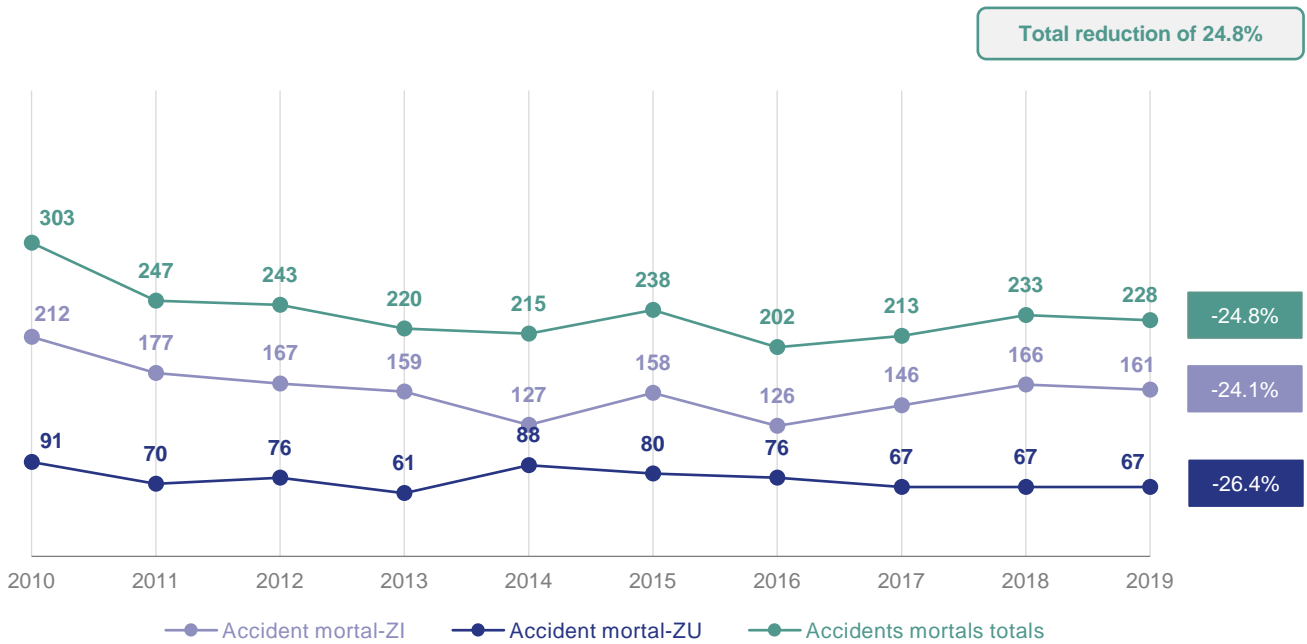
Trend in the number of accidents with casualties. 2010–2019



In terms of the severity of road traffic accidents, the following graphs show a significant reduction in fatal road traffic accidents, a more moderate decrease in serious accidents and an increase in slight accidents in comparison with 2010.

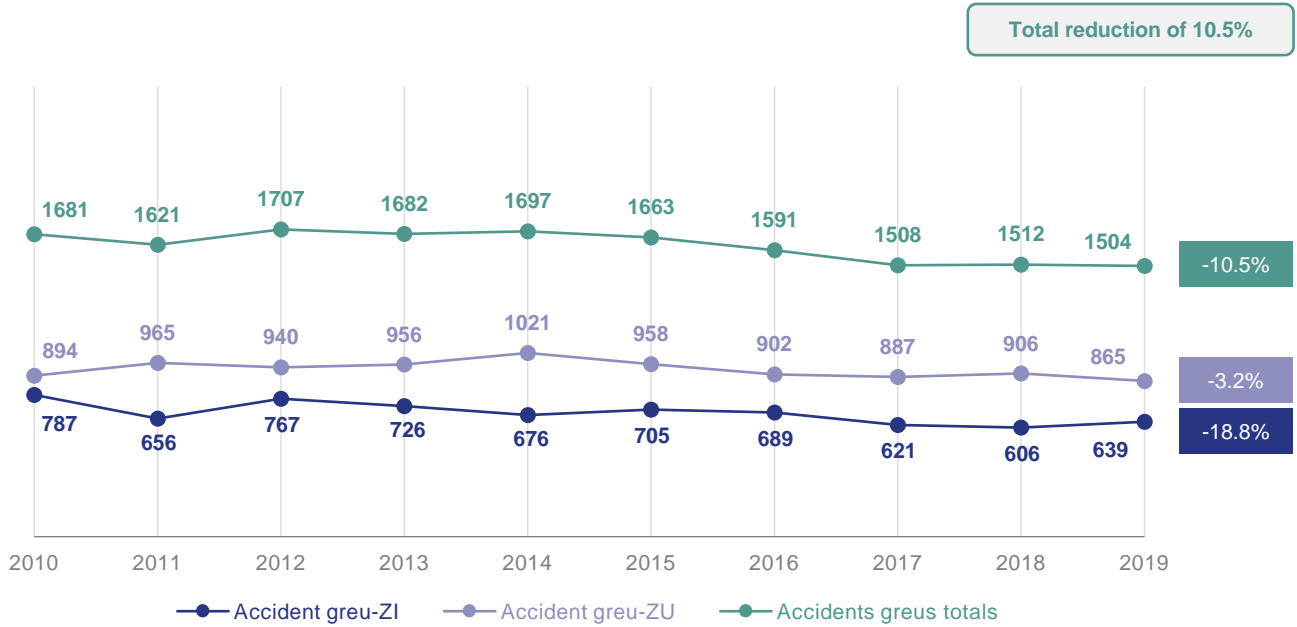
Thus, fatal road traffic accidents have considerably decreased (-24.8% overall since 2010), although there has been an uptick in interurban areas in recent years (27.7% since 2016). 2019 was the first year since 2016 when the number of fatal road traffic accidents did not rise from the previous year.

Trend in the number of fatal road traffic accidents. 2010–2019



Serious accidents in interurban areas have considerably dropped since 2010 (-18.8%) despite the fact that it was the first year since 2015 that this figure increased compared with the previous year. In contrast, for urban areas, there was a 4.5% reduction in relation to the previous year and a 3.2% decrease for the entire period in 2019.

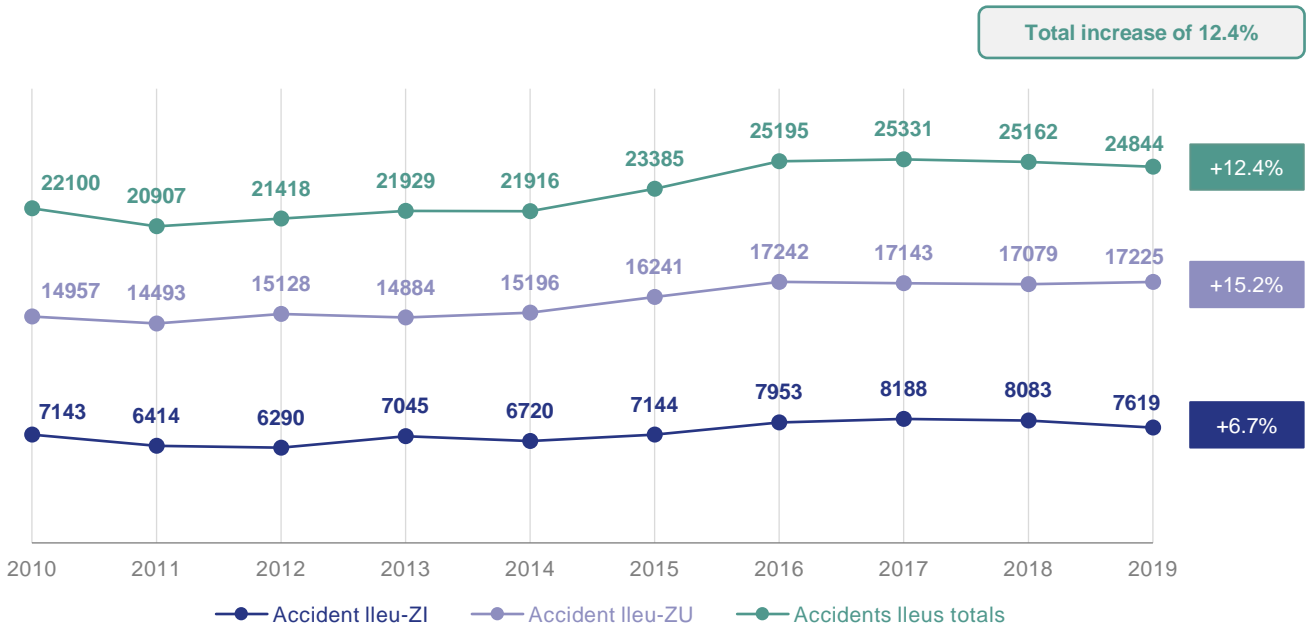
Trend in the number of serious accidents. 2010–2019



The increase in the number of road traffic accidents with casualties was mainly due to the increase in slight accidents, which increased by 12.4% compared with 2010, although there was a slight decrease in 2019 as against the previous year.

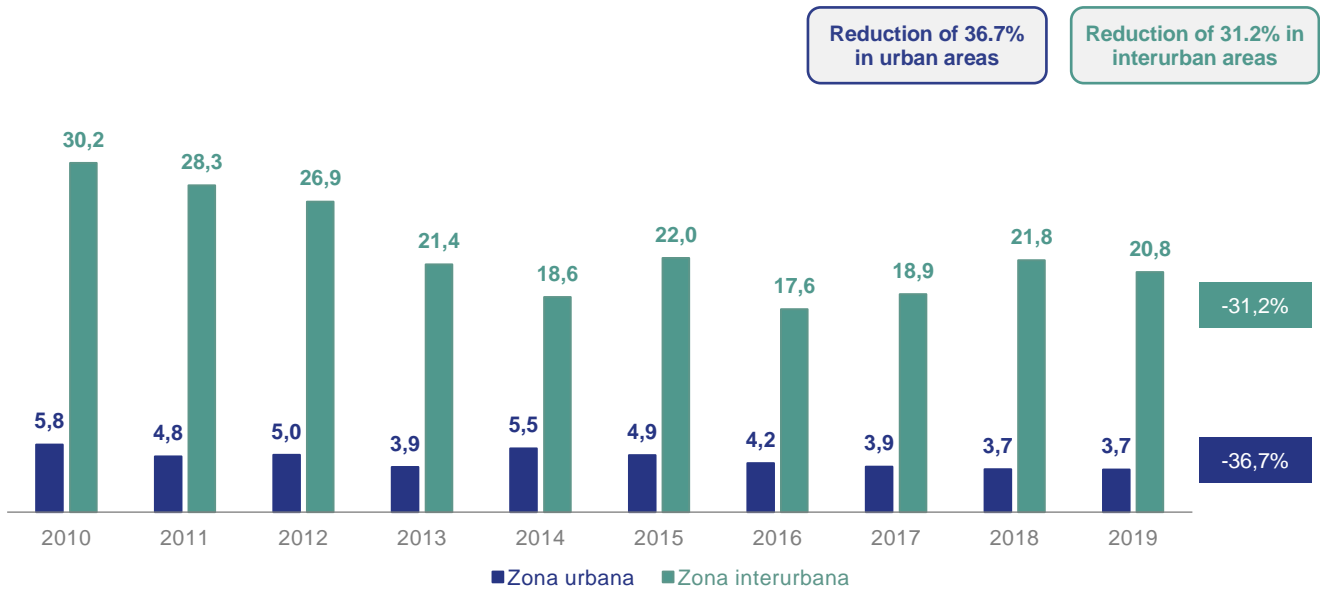
In 2019, slight accidents accounted for 93.5% of all accidents with casualties (91.8% in 2010).

Trend in the number of slight accidents. 2010–2019



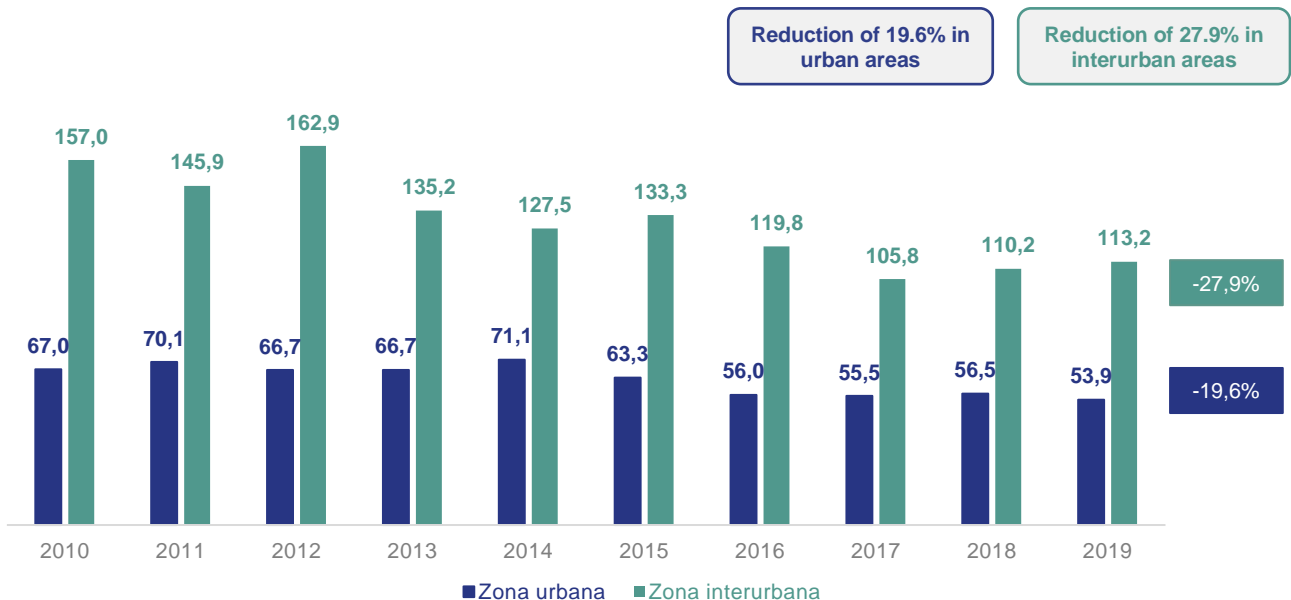
A reduction in the ratio of fatalities within 24 hours to total accidents with casualties – both in urban areas and interurban areas for the 2010–2019 period – was observed. Despite the uptick observed in 2018, 2019 showed a downward trend again.

Trend in the ratio of fatalities within 24 hours/1,000 accidents. 2010–2019



In the same vein, for the 2010–2019 period, the ratio of fatalities and seriously injured casualties/1,000 accidents decreased by 27.7% in interurban areas and by 19.6% in urban areas despite the rise in interurban areas in 2019.

Trend in the ratio of fatalities within 24 hours and seriously injured casualties/1,000 accidents. 2010–2019



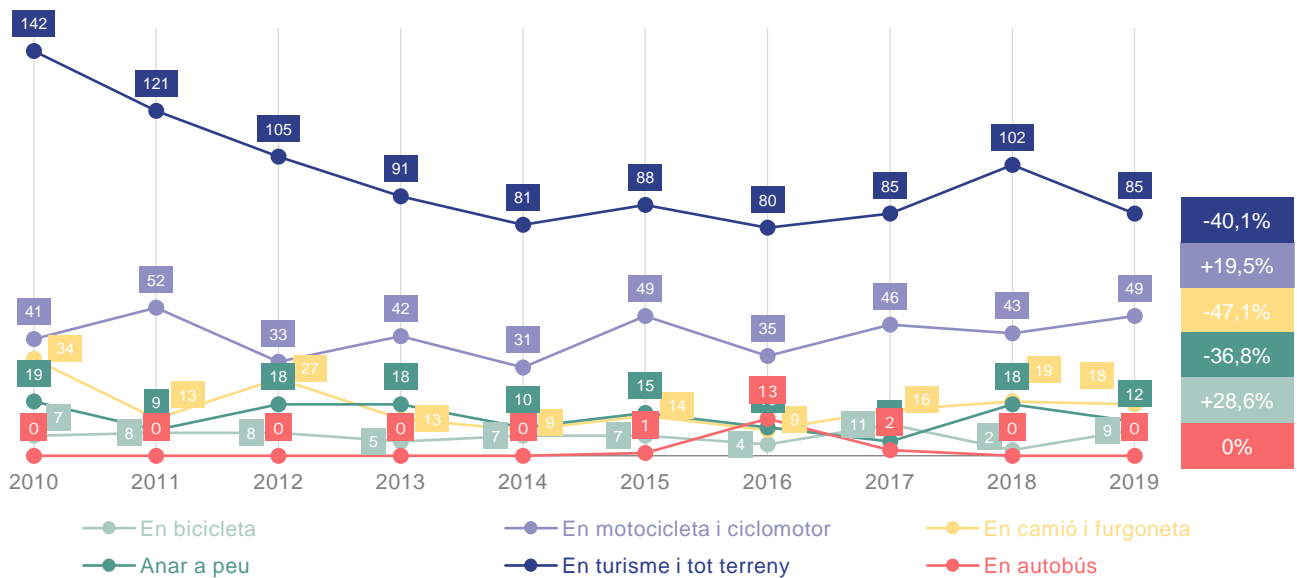
Trend in accident rates by mode of transport and vulnerable road user group

The following is an analysis of road traffic accidents by mode of transport, bearing in mind the accident rates for the most vulnerable road user groups.

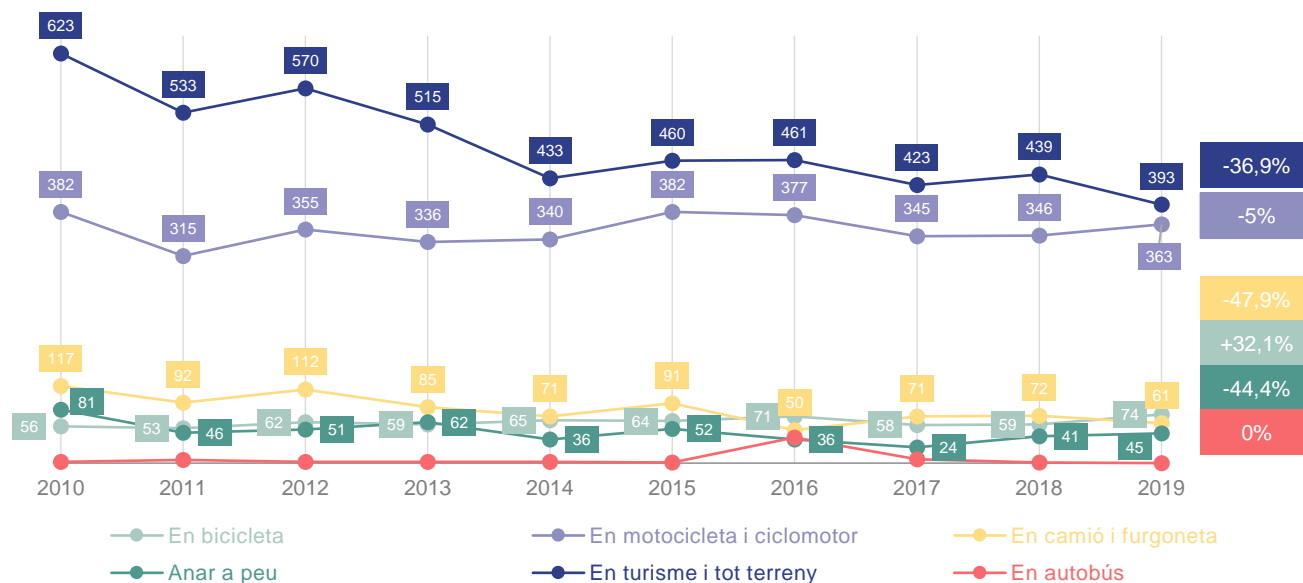
Vulnerable road user groups refer to everyone who – due to their mode of transport or the physical characteristics of the age band they belong to – are more likely to suffer a road traffic accident or get killed or injured as a result of the accident. In this regard, these include pedestrians in general (particularly children and the elderly), pedal cyclists, motorcyclists and personal mobility vehicle users.

The graphs below show the trend in the number of fatalities within 24 hours by mode of transport and road user group and the number of fatalities within 24 hours and seriously injured casualties for the 2010–2019 period in **interurban areas**.

Trend in the number of fatalities within 24 hours by mode of transport. 2010–2019. Interurban areas



Trend in the number of fatalities within 24 hours and seriously injured casualties by mode of transport. 2010–2019. Interurban areas



Passenger cars, 4x4 vehicles, HGVs, vans and buses or coaches

After analysing road traffic accidents by mode of transport in interurban areas, passenger cars/4x4 vehicles had the most fatalities within 24 hours, with 85 casualties in 2019 and a 40.1% decrease compared with 2010, offsetting the upturn in 2018.

Fatalities involving buses or coaches remained at zero while fatalities involving HGVs and vans fell by 47.1%. The 47.9% decrease in fatalities and seriously injured casualties involving HGVs or vans and the 36.9% decrease in passenger cars and 4x4 vehicles for this period are also worth pointing out.

Pedal cyclists

Bicycle fatalities increased, going from 7 in 2010 to 9 in 2019 in interurban areas. As regards the number of fatalities and seriously injured casualties, the 32.1% rise in bicycle fatalities and seriously injured casualties for the 2010–2019 period (from 56 to 74) stands out.

Pedestrians

Pedestrian fatalities dropped by 36.8% in 2019 compared with 2010 in interurban areas (from 81 to 45). The 44.4% reduction in fatalities and seriously injured casualties (from 81 to 45) is also worth highlighting.

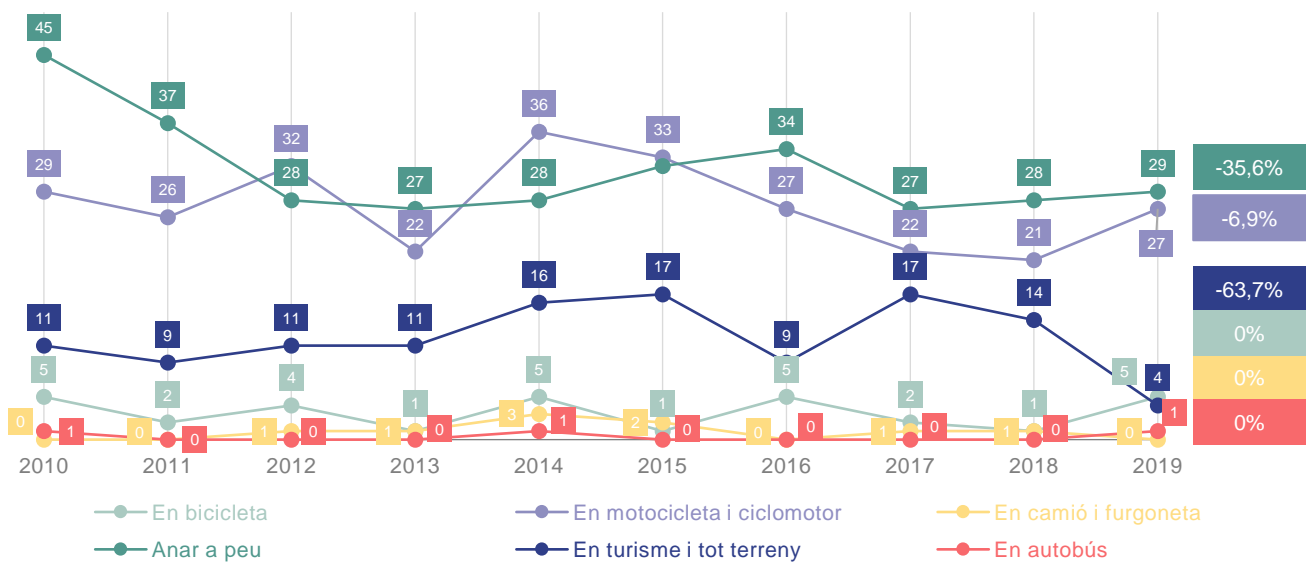
Motorcyclists

In 2019, motorcycle/moped fatalities in interurban areas stood at 49, increasing by 19.5% compared with 2010. There was a slight decrease in seriously and fatally injured motorcycle/moped casualties, although it was quite low – 5%.

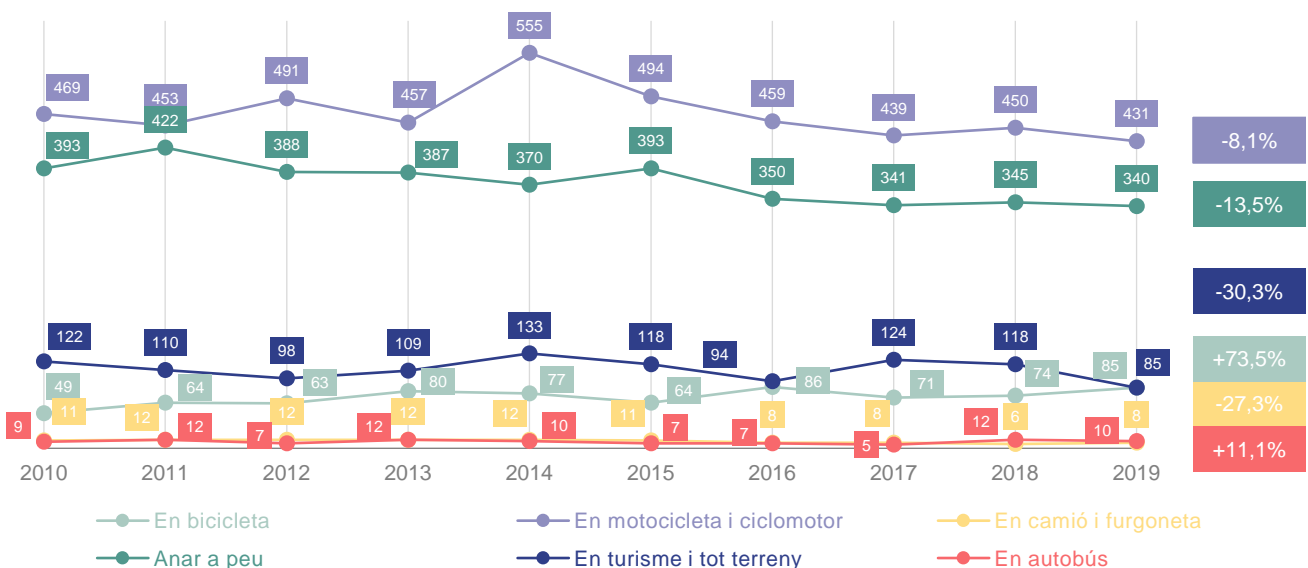
In terms of urban areas, the trends in the number of fatalities within 24 hours and the number of fatalities within 24 hours and seriously injured casualties by mode of transport and road user group for the 2010–2019 period are shown below.

In urban areas, the modes of transport with the most fatalities and seriously injured casualties involved walking and motorcycles/mopeds.

Trend in the number of fatalities within 24 hours by mode of transport. 2010–2019. Urban areas



Trend in the number of fatalities within 24 hours and seriously injured casualties by mode of transport. 2010–2019. Urban areas



Passenger cars, 4x4 vehicles, HGVs, vans and buses or coaches

In urban areas, for the 2010-2019 period, the 63.7% drop in fatalities within 24 hours travelling in passenger cars and 4x4 vehicles stands out, reaching the lowest point for the period: 4 casualties. HGV and van fatalities remained at 0 in urban areas and there was 1 bus or coach fatality, the same as in 2010.

As regards fatalities and seriously injured casualties, 2019 saw the lowest figure for the 2010–2019 period involving passenger cars and 4x4 vehicles, with a 30.3% drop compared with 2010 and a 27.3% decrease in HGVs and vans.

In contrast, bus or coach fatalities and seriously injured casualties increased by 11.1% during this period.

Pedal cyclists

The number of fatalities within 24 hours involving pedal cyclists in urban areas rose from 1 to 5 compared with 2018 and remained constant compared with 2010.

Conversely, during the 2010–2019 period, bicycle fatalities and seriously injured casualties increased by 73.5%. However, it's important to bear in mind that this mode of transport saw an exponential growth in popularity over the past decade.

Pedestrians

In 2019, there were 29 pedestrian fatalities in urban areas. For the 2010–2019 period, the drop in pedestrian fatalities was quite remarkable, with a reduction of 35.6% (from 45 to 29). By comparison, the decrease in fatalities and seriously injured casualties was much less (-13.5%).

Motorcyclists

As regards motorcycle and moped fatalities in urban areas, there was a significant increase compared with 2018, although there was an overall decrease of 6.9% for the entire 2010–2019 period.

The reduction in motorcycle and moped fatalities and seriously injured casualties for the aforementioned period was 8.1%.

Below is a table summarising the accident rate indicators by the vulnerable road user groups analysed:

Accident rate indicator by mode of transport	2010	2019	% var 2010–2019
Pedestrians			
Fatalities within 24h in interurban areas	19	12	⬇️ -36.8%
Fatalities within 24h in urban areas	45	29	⬇️ -35.6%
Fatalities within 24h and seriously injured casualties in interurban areas	81	45	⬇️ -44.4%
Fatalities within 24h and seriously injured casualties in urban areas	393	340	⬇️ -13.5%
Bicycles			
Fatalities within 24h in interurban areas	7	9	⬆️ 28.6%
Fatalities within 24h in urban areas	5	5	⊖ 0.0%
Fatalities within 24h and seriously injured casualties in interurban areas	56	74	⬆️ 32.1%
Fatalities within 24h and seriously injured casualties in urban areas	49	85	⬆️ 73.5%
Motorcycles and mopeds			
Fatalities within 24h in interurban areas	41	49	⬆️ 19.5%
Fatalities within 24h in urban areas	29	27	⬇️ -6.9%
Fatalities within 24h and seriously injured casualties in interurban areas	382	363	⬇️ -5.0%
Fatalities within 24h and seriously injured casualties in urban areas	469	431	⬇️ -8.1%

High-risk groups by road user group

The high-risk groups identified according to their mode of transport are shown below.

Considering the fatalities and seriously injured casualties across all modes of mobility, the predominant high-risk groups that were identified are motorcycle and moped riders aged 15–54, pedestrians over 74 and young people aged 15–24 riding in passenger cars/4x4 vehicles.

Fatalities and seriously injured casualties/100,000 inhabitants, 2019

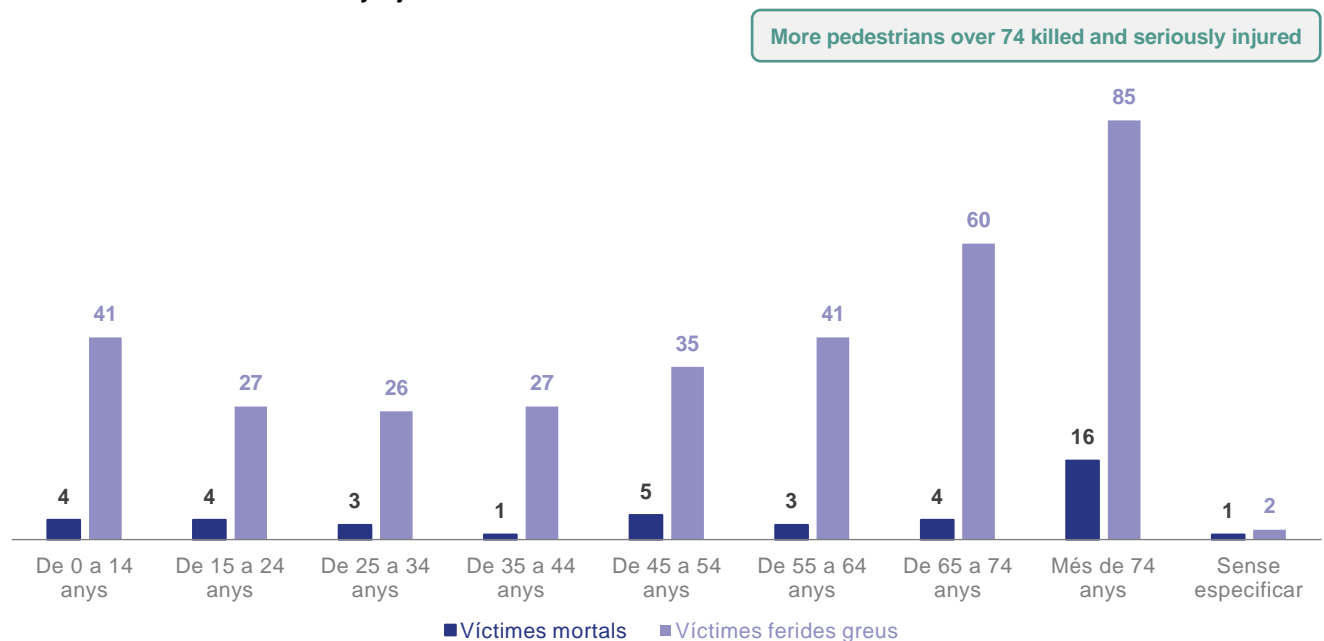
Age band	Pedestrians	Pedal cyclists	Motorcycle riders	Moped riders	In passenger cars and 4x4 vehicles	In heavy vehicles
Aged 0–14	3.8	0.7	0.2	0.1	1.5	0.2
Aged 15–24	4.0	2.9	10.8	2.9	10.4	0.5
Aged 25–34	3.3	1.7	17.3	1.0	8.7	1.4
Aged 35–44	2.3	1.7	12.1	1.2	5.5	1.5
Aged 45–54	3.4	2.9	15.4	1.5	5.3	2.0
Aged 55–64	4.7	3.2	11.4	0.9	5.8	1.2
Aged 65–74	8.8	2.2	3.4	0.3	7.4	0.4
Over 74	14.2	1.3	1.0	0.1	8.6	1.4

Thus, the high-risk groups detected through the analysis by mode of transport are as follows:

- Pedestrians: 74+
- Pedal cyclists: Aged 45–64
- Motorcycle riders: Aged 25–54
- Moped riders: Aged 15–24
- In passenger cars and 4x4 vehicles: Aged 15–24
- In heavy vehicles: Aged 35–54

As regards pedestrians, the figure below shows that the age band with the most fatalities and seriously injured casualties comprised people over 74.

Pedestrians: fatalities and seriously injured casualties. 2019

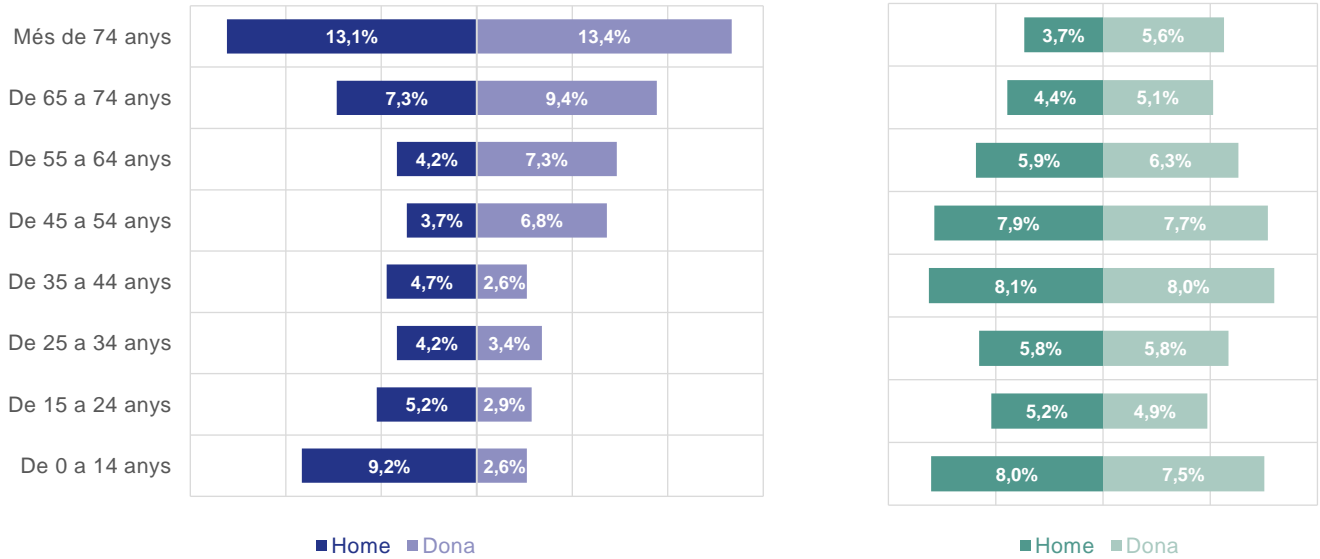


Below is a comparison of the percentage representing fatalities and seriously injured casualties by age band and the percentage of the population they represent.

Among pedestrians, the proportions of male and female casualties over 65 stood out. Men over 74 represented 3.7% of the population; however, they accounted for 13.1% of the fatalities. With regard to women, 13.4% were casualties over 74 despite the fact that they only accounted for 5.6% of the population.

95% of road traffic accidents resulting in a pedestrian fatality or serious injury were due to pedestrian knock-downs. And almost 90% of these accidents took place in urban areas.

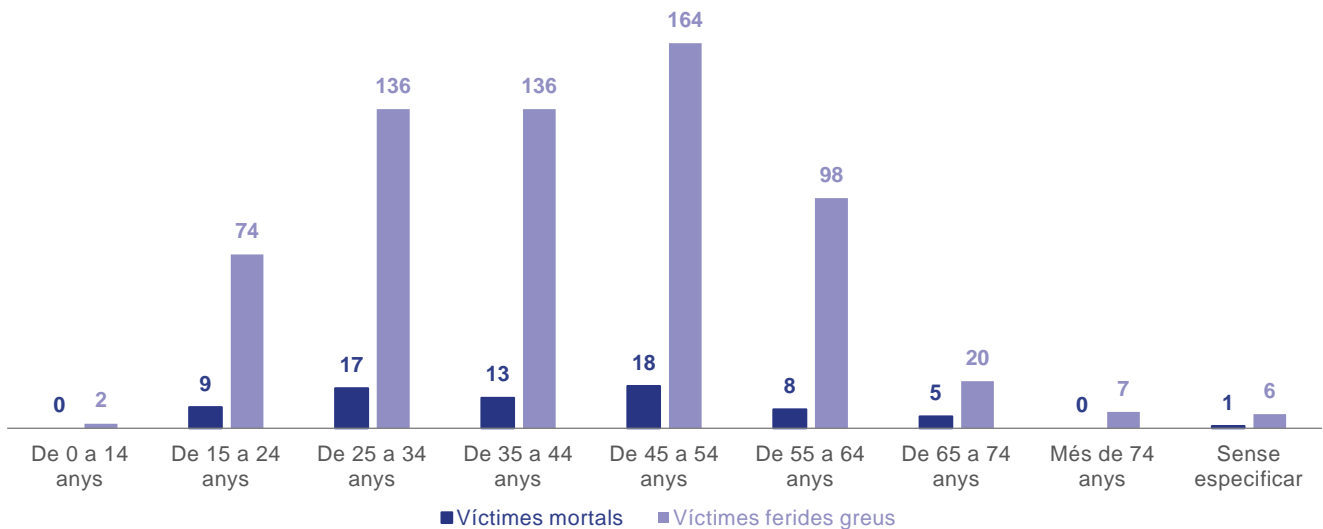
Pedestrians: fatalities within 24 hours and seriously injured casualties by age band (%). 2019
Population pyramid (%). 2019



As regards motorcyclist fatalities and seriously injured casualties, the figure below shows how the group with the most road traffic accidents is the 45–54 age band, although the number of fatalities and seriously injured casualties is also quite high among those aged 25–44.

Motorcyclists: fatalities and seriously injured casualties. 2019

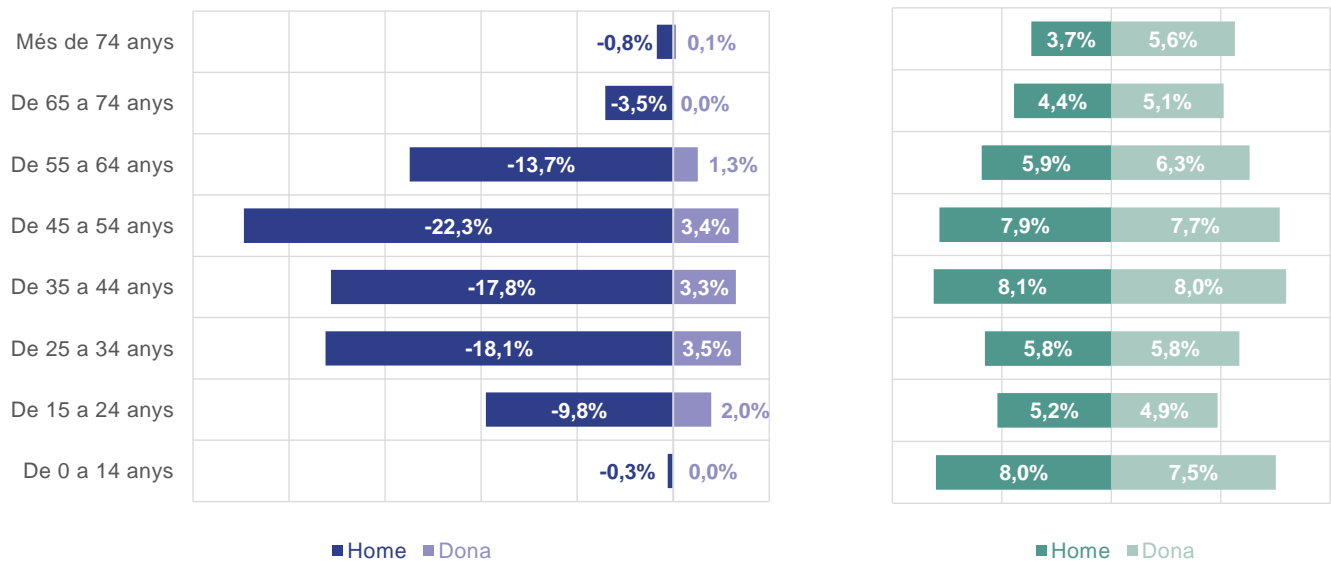
More motorcyclists aged 45–54 killed and seriously injured



Considering motorcyclist fatalities and seriously injured casualties, casualties are overwhelmingly male, particularly in the 45–54 age band (22.3% of the casualties) and the 25–34 age band (18.1%).

According to the Working Day Mobility Survey (EMEF) of 2019, an annual survey conducted by the Metropolitan Transport Authority (ATM) of Barcelona, men ride motorcycles/mopeds four times as often as women, and there are six times as many fatalities and seriously injured casualties among men as women.

Motorcyclists: fatalities within 24 hours and seriously injured casualties by age band (%). 2019
Population pyramid (%). 2019

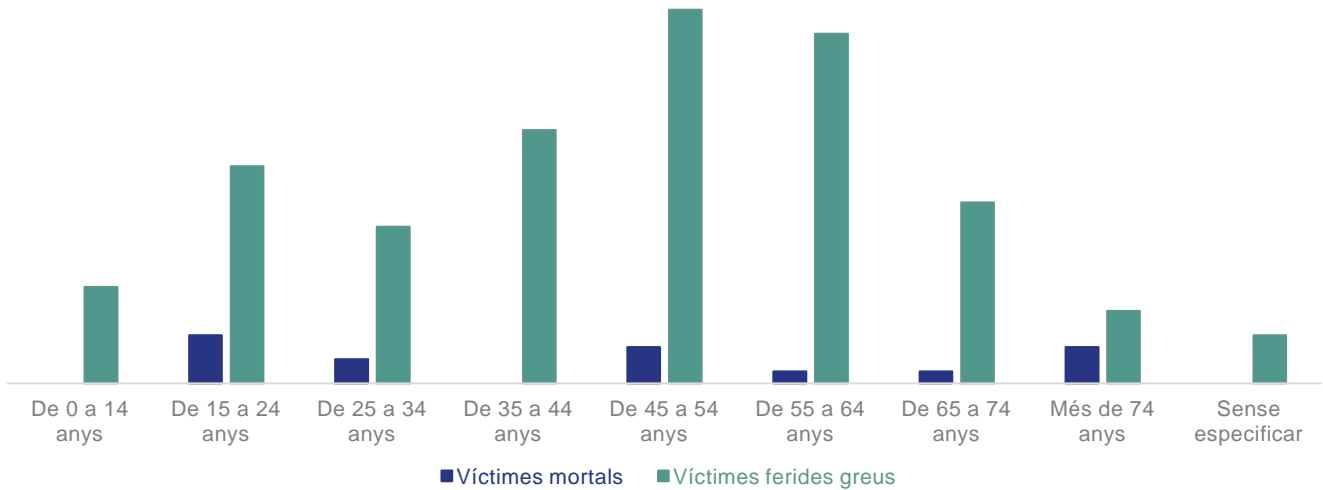


As regards pedal cyclists, the figure below – with the fatalities and seriously injured casualties in urban and interurban areas – shows that the group of young people aged 15–24 is the group with the most fatalities. As for seriously injured casualties, the 45–54 age band has the most seriously injured casualties.

Pedal cyclists: fatalities and seriously injured casualties. 2019

More pedal cyclists aged 15–24 killed

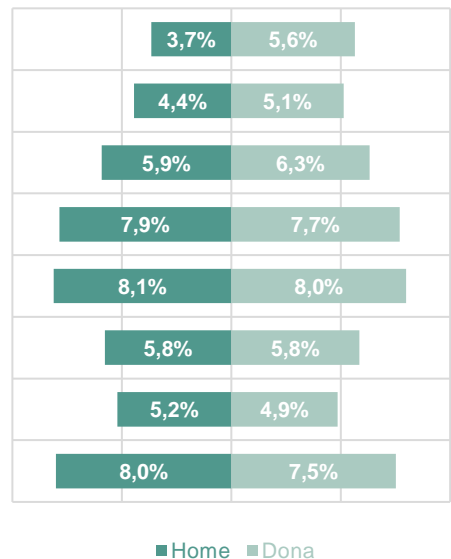
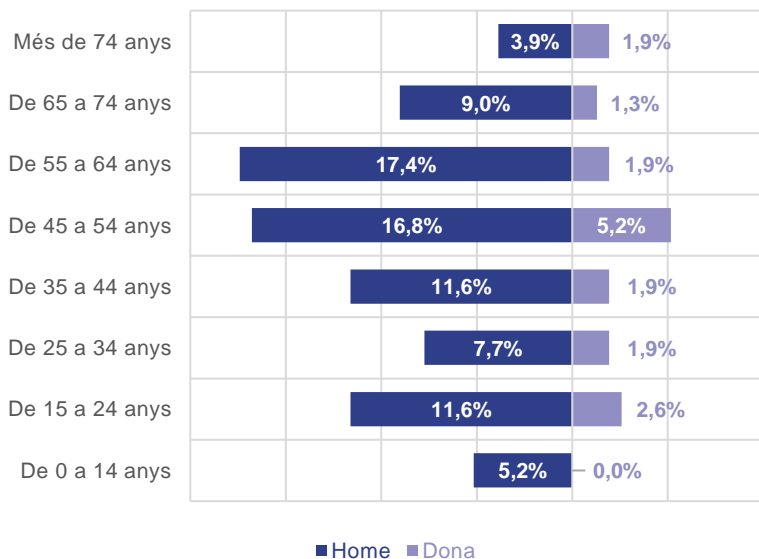
More pedal cyclists aged 45–54 seriously injured



The greatest proportion of pedal cyclist fatalities and seriously injured casualties is found among men aged 35–64 (45.8%), despite the fact that they only account for 21.9% of the population.

According to the Working Day Mobility Survey (EMEF) of 2019, men ride bicycles twice as often as women, and there are six times as many fatalities and seriously injured casualties among men as women.

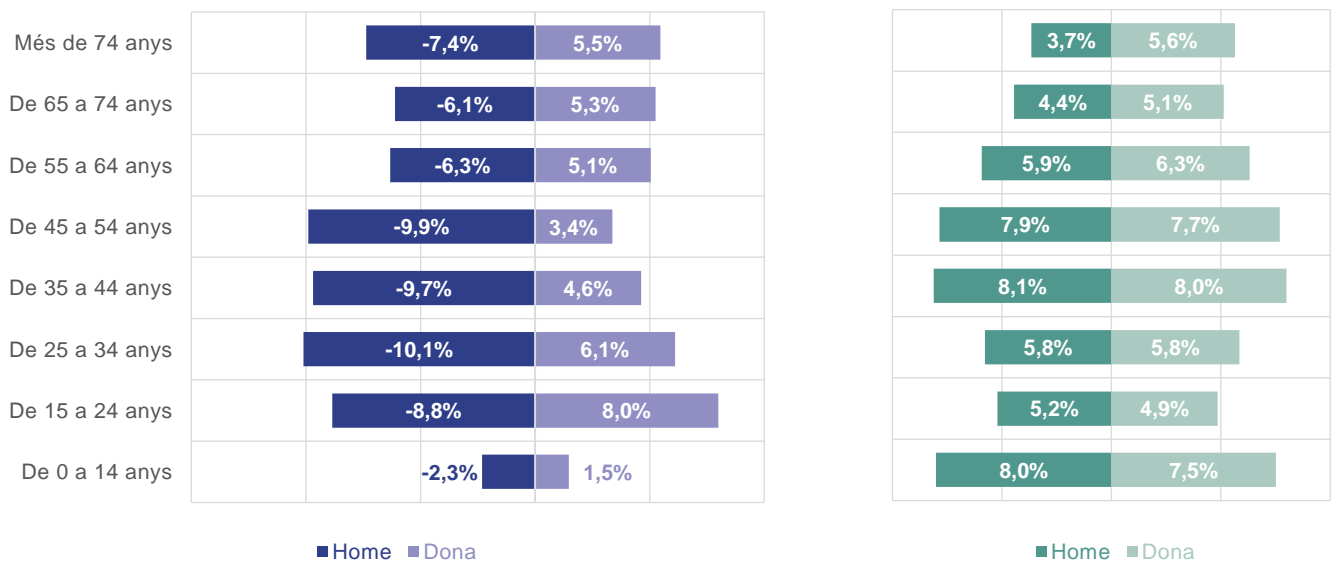
Motorcyclists: fatalities within 24 hours and seriously injured casualties by age band (%). 2019
Population pyramid (%). 2019



In passenger cars/4x4 vehicles, generally speaking, there are more male casualties than female ones. In terms of age, the 15–54 age bands stand out, with percentages of around 10% among men. As for the women, the 15–24 age band is striking.

According to the data from the census of drivers in 2019, among driving licence holders, 43% were women while 57% were men. For all that, based on the Working Day Mobility Survey (EMEF) of 2019, men drive passenger cars 1.2 times more often than women and there are 1.6 times as many fatalities and seriously injured casualties among men as women.

Passenger cars and 4x4 vehicles: fatalities within 24 hours and seriously injured casualties by age band (%). 2019
Population pyramid (%). 2019



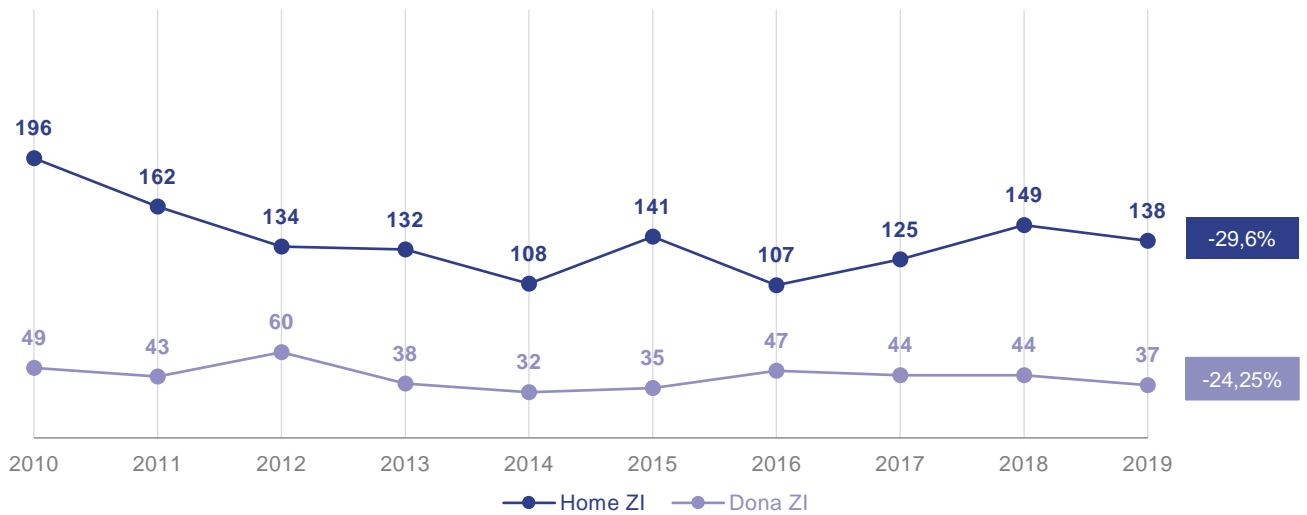
Trend in accident rates by gender

Continuing with the analysis of accident rates by gender, the figures for fatalities and seriously injured casualties are analysed below. Considering the aggregate data for 2010–2019, there were 3.8 times as many male fatalities as female ones.

The increase in fatalities within 24 hours since 2016 was due to men (28.9%), as female fatalities decreased and went from 47 to 37 in interurban areas and from 22 to 13 in urban areas for this period. In contrast, male fatalities rose in interurban areas during this period, increasing from 107 to 138.

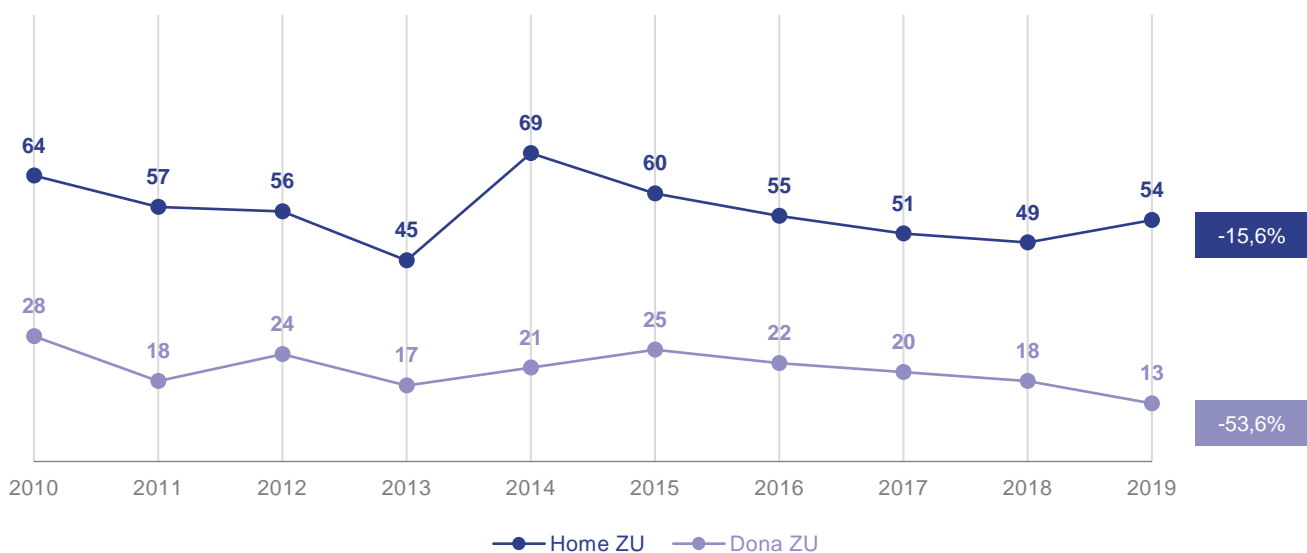
Trend in the number of fatalities within 24 hours by gender in interurban areas. 2010–2019

Generalised decrease in interurban areas



Trend in the number of fatalities within 24 hours by gender en urban areas. 2010–2019

Sharp decrease in female fatalities in urban areas

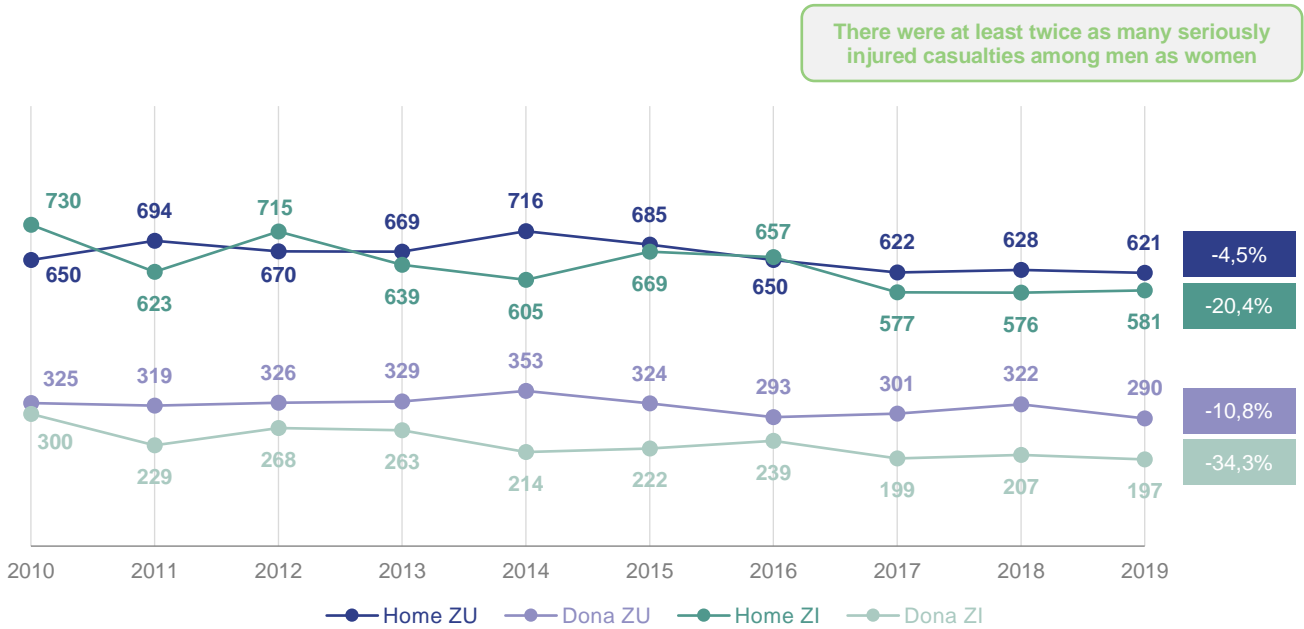


The increase in fatalities within 24 hours since 2016 was due to men (28.9%), as female fatalities decreased and went from 47 to 37 in interurban areas and from 22 to 13 in urban areas for this period. In contrast, male fatalities rose in interurban areas during this period, increasing from 107 to 138.

In interurban areas, there were three times as many seriously injured male casualties as female ones. By comparison, in urban areas, this proportion was slightly more than double.

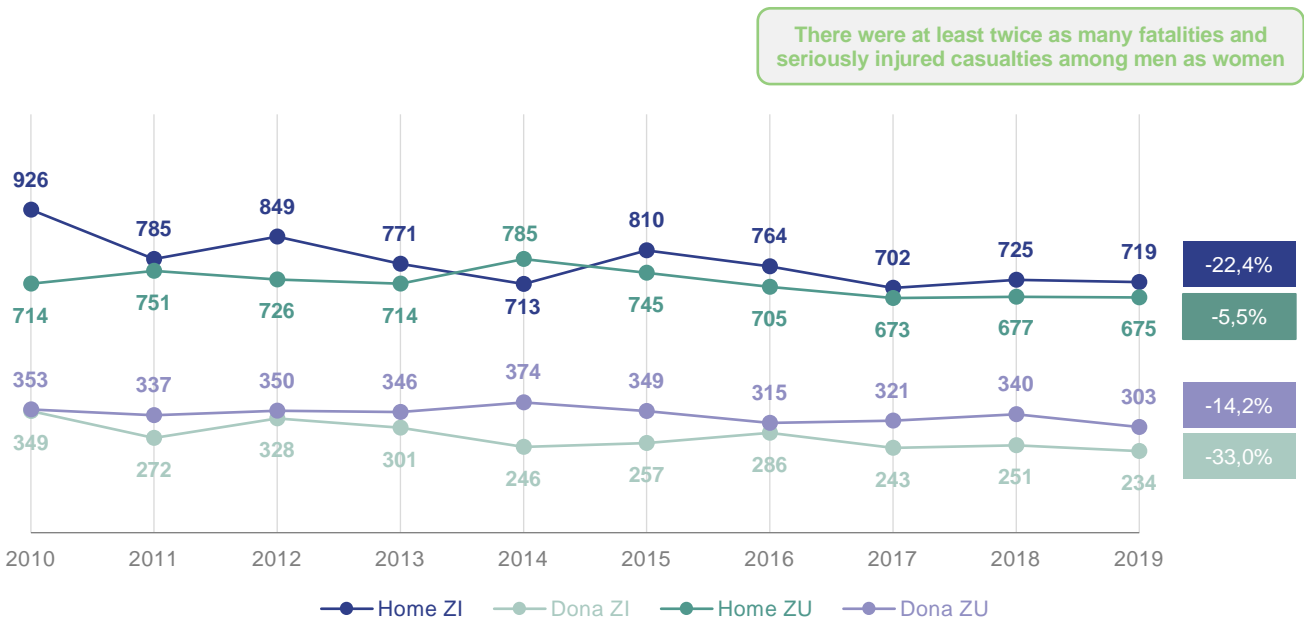
It's quite remarkable that while the number of male fatalities in urban areas rose, the number of seriously injured casualties fell.

Trend in the number of seriously injured casualties within 24 hours by gender in urban and interurban areas. 2010–2019



When considering fatalities within 24 hours and seriously injured casualties, men still represented twice as many casualties as women in urban areas and three times as many in interurban areas.

Trend in the number of fatalities within 24 hours and seriously injured casualties by gender in urban and interurban areas. 2010–2019



The effect of gender on driving offences is analysed below. The following table shows the main driving offences committed in 2019. We can see that men commit more dangerous driving offences than women, such as those related to speeding, while women commit more document offences, such as those related to vehicle registration and technical conditions or compulsory insurance:

Driving Offences in 2019	% Women	% Men
Speeding	60.4	69.9
Driving documents	3.7	3.6
Driving under the influence of drink or drugs	1.1	1.2
Driver's behaviour	3.6	3.5
Seat belt, helmet and protective measures	1.1	1.2
Stopping and parking	0.9	0.9
Failure to comply with traffic and road signs	2.2	2.5
Compulsory vehicle insurance	5.9	4.5
Vehicle registration and technical conditions	14.9	9.5

In both cases, the most common driving offence in both men and women was speeding. In 2019, women accounted for 60.4% of all complaints while men 69.9%, with ten percentage points of difference.

After analysing the data, it's clear that as a result of the differential gender socialisation process that is perpetuated in our societies, women and men have different mobility and driving patterns related to the social role of care. They have either more aggressive or more collaborative characteristics depending on this differential socialisation, thereby conditioning their accident rates.

Further information on accident statistics

Location

In terms of interurban areas by province, the increase in fatalities within 24 hours in the Barcelona interurban network since 2016, which went from 48 to 80, stood out. This upturn started in 2017, with 73 fatalities, despite the fact that there was an overall decrease in Barcelona for the 2010–2018 period by 7%.

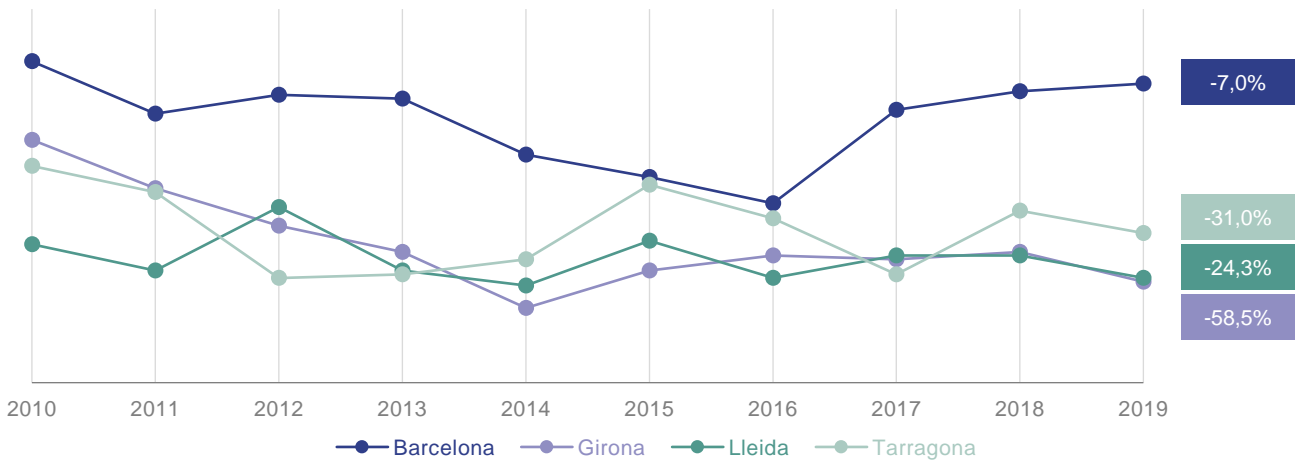
In Tarragona, in 2017, there were 29 fatalities within 24 hours – one of the lowest figures during the period – but in 2018, there was a rise in the mortality rate with 46 fatalities. In 2019, this figure dropped to 40.

In Lleida, fatalities in 2019 decreased to 28 – down 24.3% compared with 2010.

In Girona, fatalities were greatly reduced, with only 20 in 2014, the lowest for this period. The reduction for the 2010–2019 period was the most significant, with only 58.5%.

Trend in the number of fatalities within 24 hours in interurban areas by province. 2010–2019

Girona had the sharpest decline in interurban areas

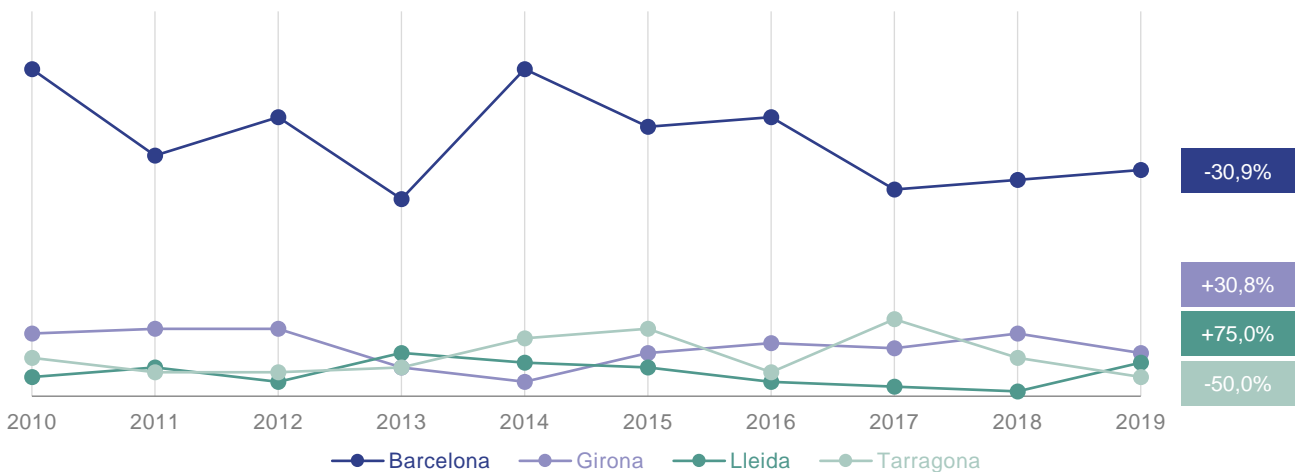


In urban areas such as the province of Barcelona, which had the highest number of fatalities, fatalities within 24 hours have decreased by 30.9% since 2010 – going from 68 to 47 – although this figure has increased since 2018.

In Girona, fatalities within 24 hours in the urban network has fallen by 30.8% since 2010 and in Tarragona by 50%, while in Lleida, this figure went from 4 to 7 – a 75% increase%.

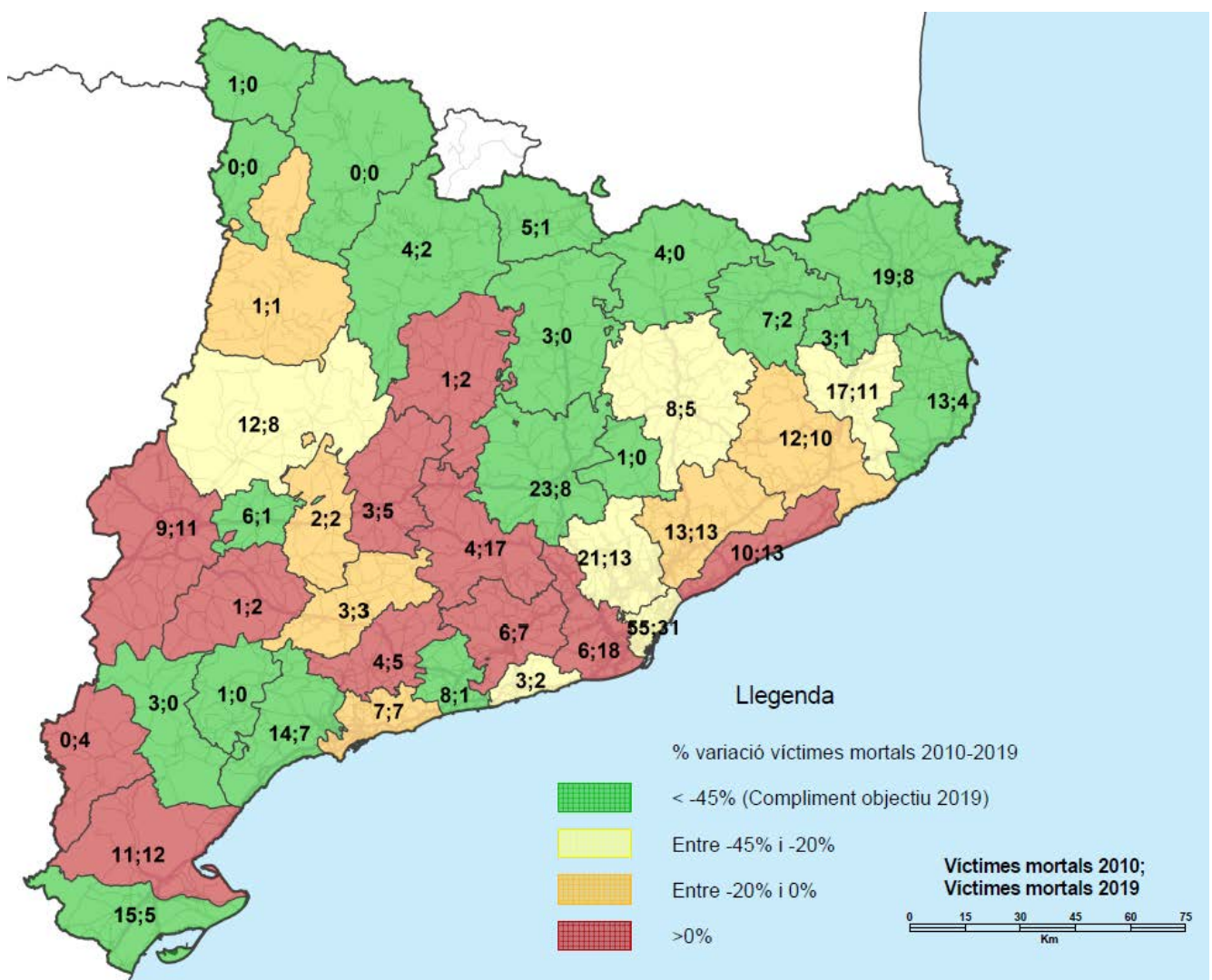
Trend in the number of fatalities within 24 hours in urban areas by province. 2010–2019

Lleida recorded the sharpest rise in urban areas



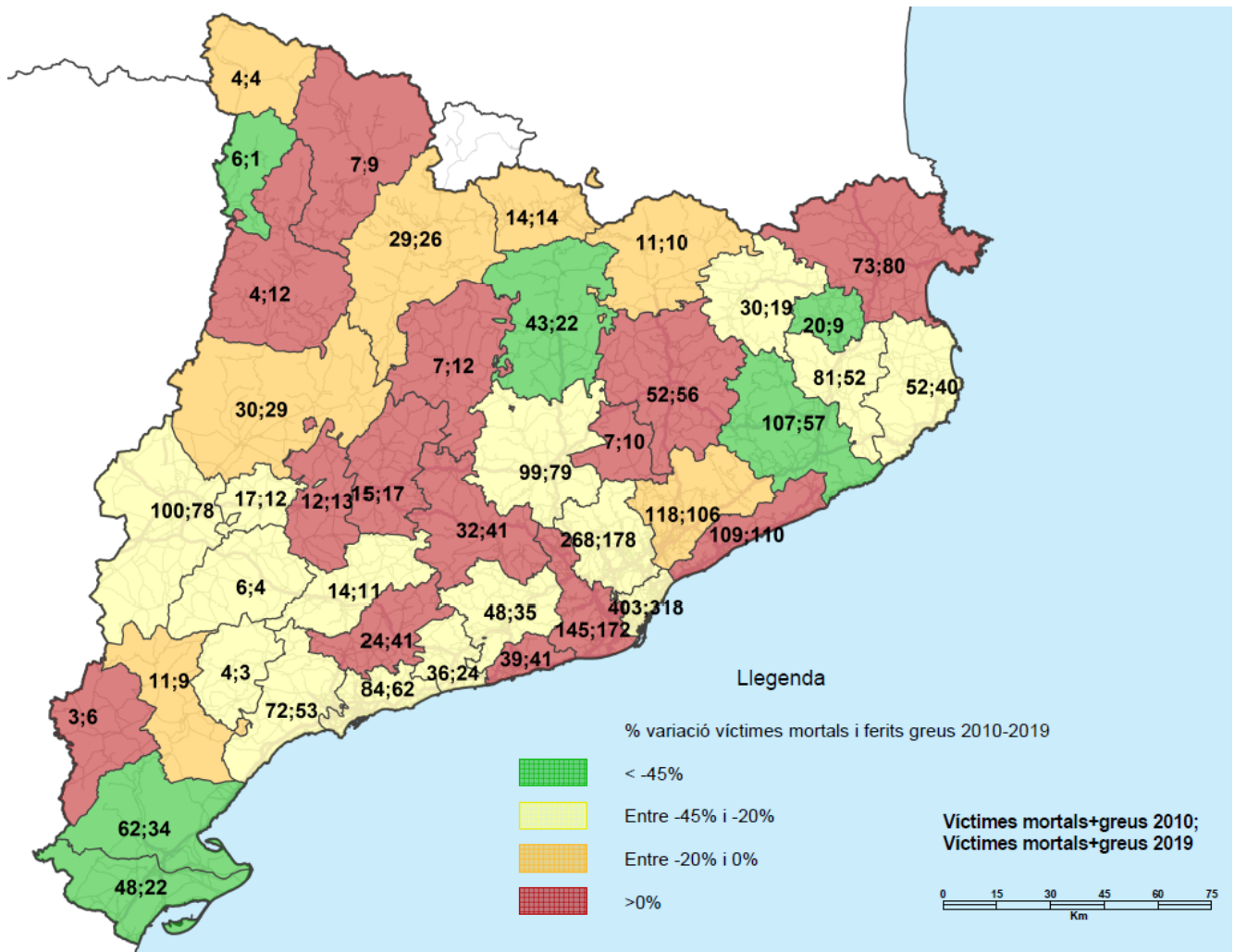
When analysing compliance with the targets for the reduction of fatalities by county, there's a certain improvement compared with the previous analysis of the 2010–2018 period. There's a larger number of counties in green (19 counties met the target of reducing fatalities by 45% for 2010–2019) and a smaller number of counties in yellow (11 counties with an increase in casualties for the 2010–2019 period).

Variability in fatalities for 2010–2019 and level of compliance with the target



When seriously injured casualties are included, there's also a certain improvement compared with the previous analysis of the 2010–2018 period. It's not that there are more counties in green; there are actually less counties in yellow (14 counties with an increase in casualties for the 2010–2019 period).

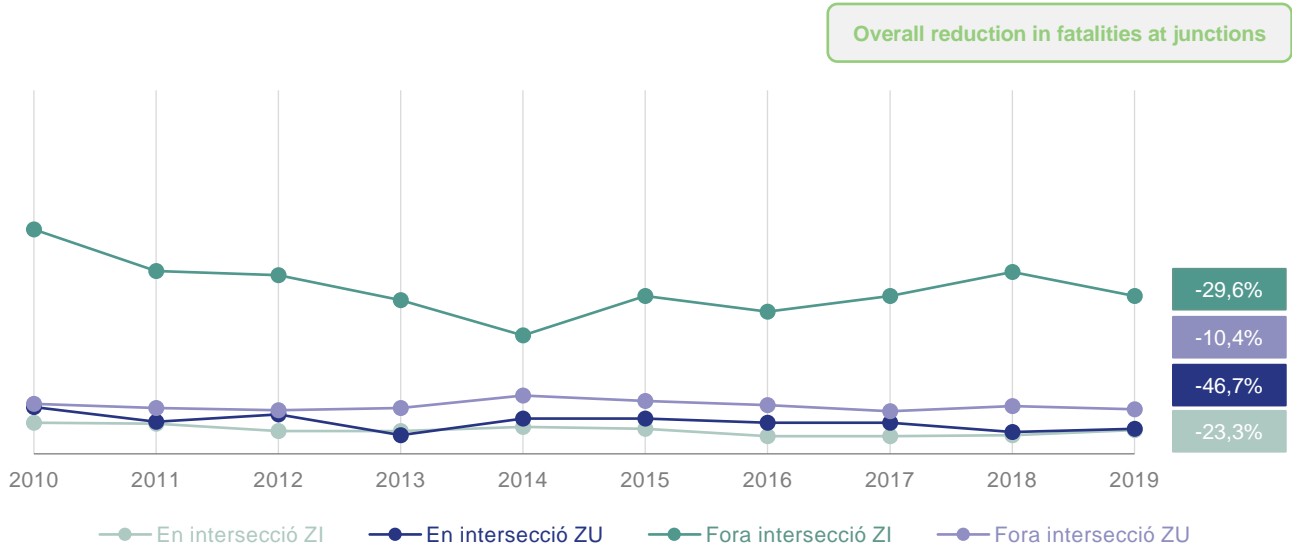
Variability in fatalities and seriously injured casualties for 2010–2019



Junctions

Junctions are hot spots for road traffic accidents, where 23 fatalities in interurban areas and 24 in urban areas were recorded although most fatalities did not happen at the junction itself. For the first time since 2016, a decrease compared with the previous year was observed.

Trend in the number of fatalities within 24 hours at junctions in urban and interurban areas. 2010–2019

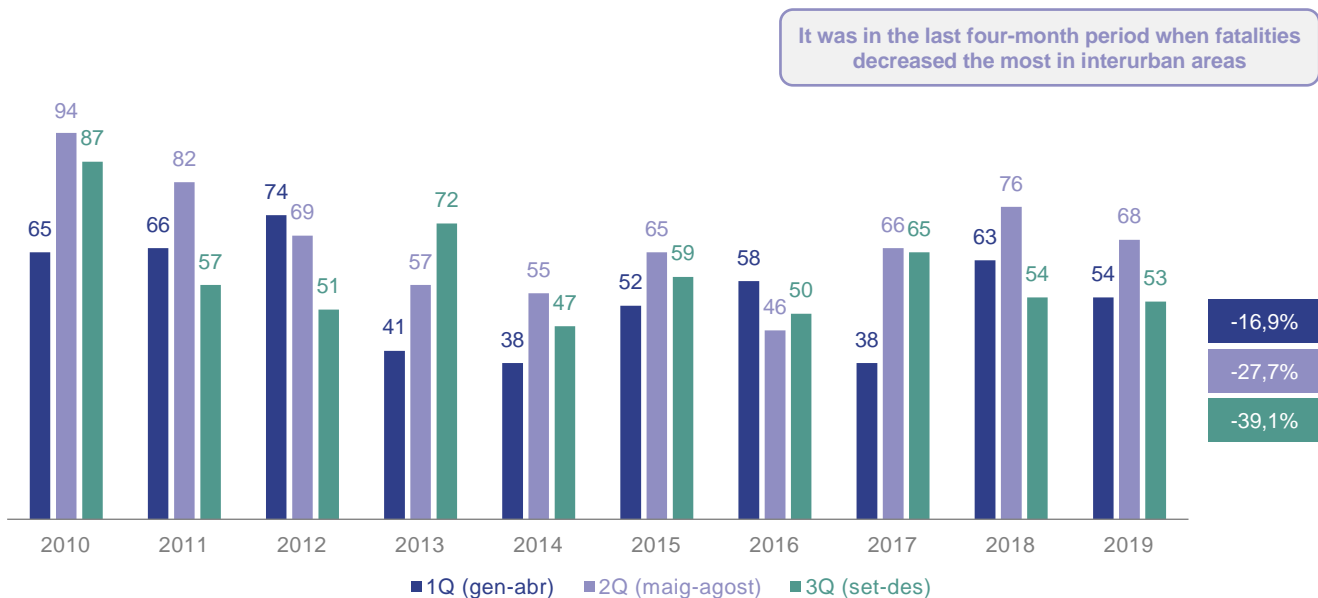


Time period

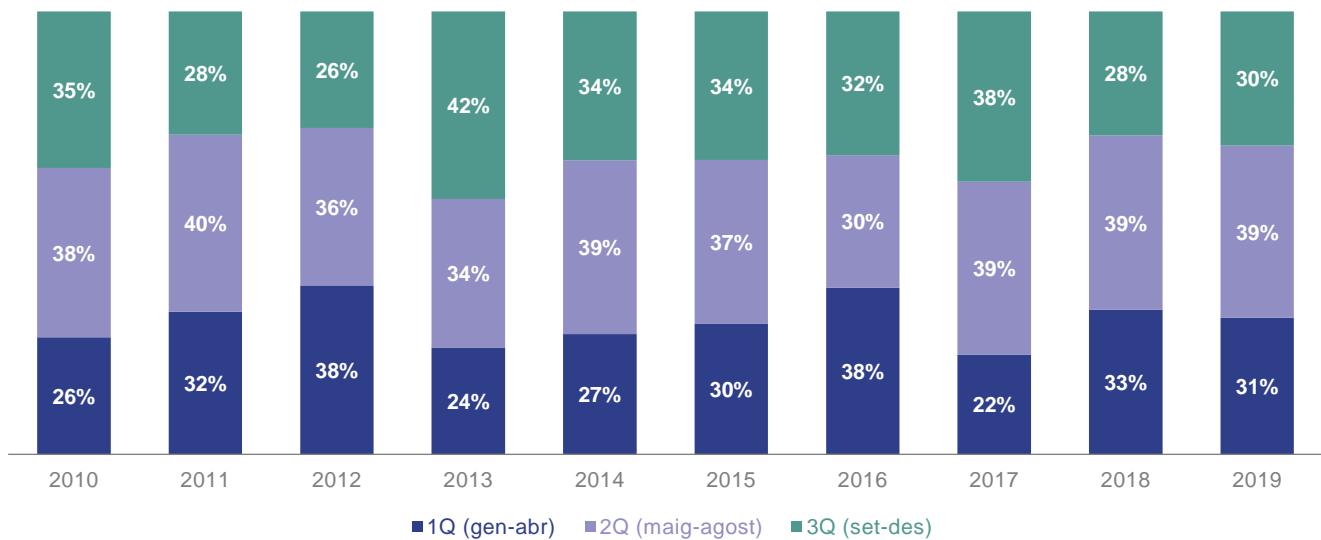
For the temporal analysis of accident rates, the months were grouped into four-month periods and the annual trend of the fatalities during the 2010–2019 period was compared.

In interurban areas, generally speaking, the four-month period with the highest number of casualties was the second one, covering the summer months. In 2019, the number of fatalities within 24 hours decreased in comparison with 2018, which was the worst summer recorded since 2011. The four-month period with the most significant reduction in casualties was the third one, with a 39.1% decrease.

Trend in the number of fatalities within 24 hours by four-month period. 2010–2019. Interurban areas



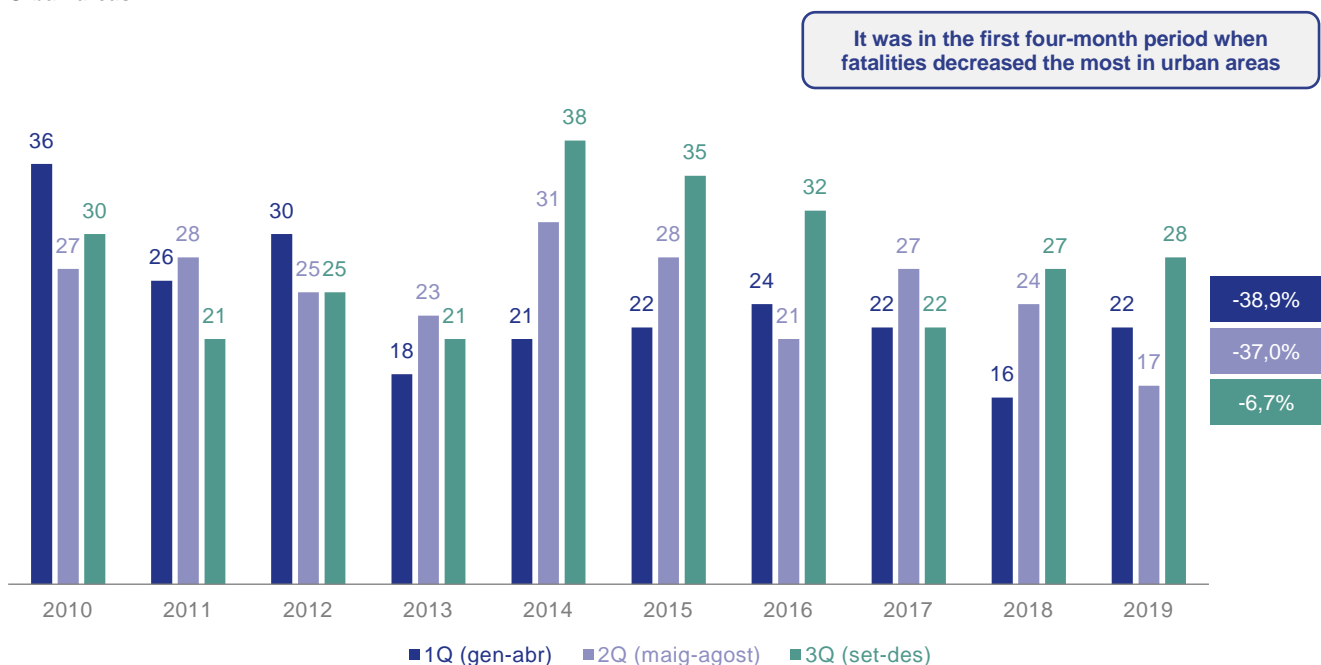
Trend in the number of fatalities within 24 hours by four-month period. 2010–2019.
Interurban areas



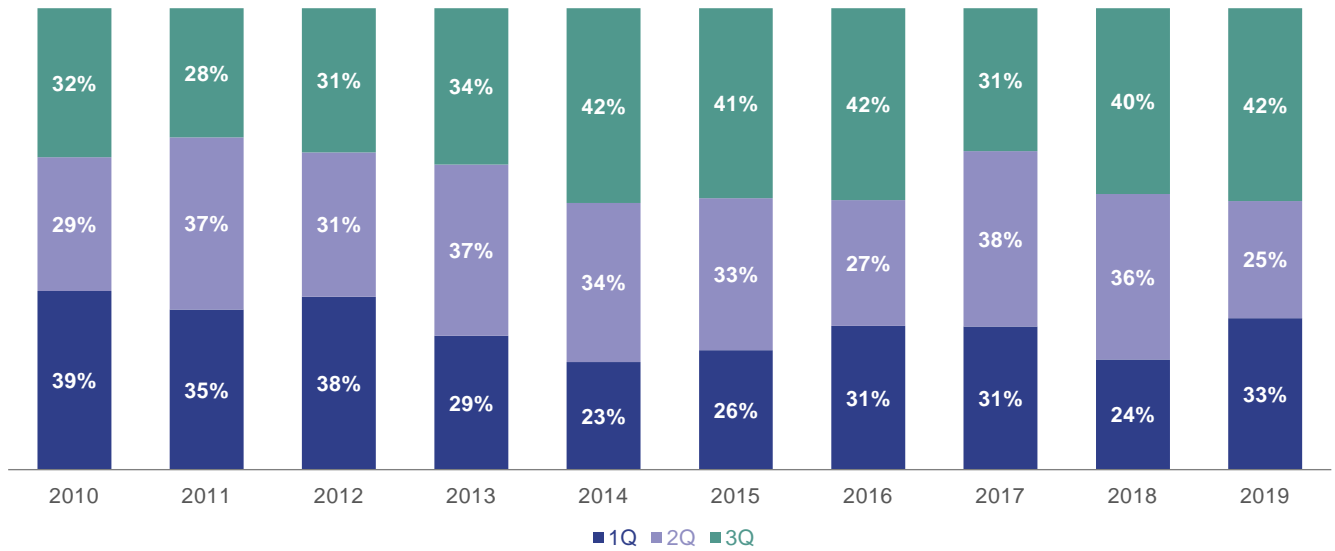
In urban areas, since 2014, there has been a clear clustering of the number of fatalities in the last four-month period (except in 2017), which only decreased by 6.7% between 2019 and 2010.

The first and second four-month periods saw considerable reductions compared with 2010 (38.9% and 37%, respectively).

Trend in the number of fatalities within 24 hours by four-month period. 2010–2019.
Urban areas



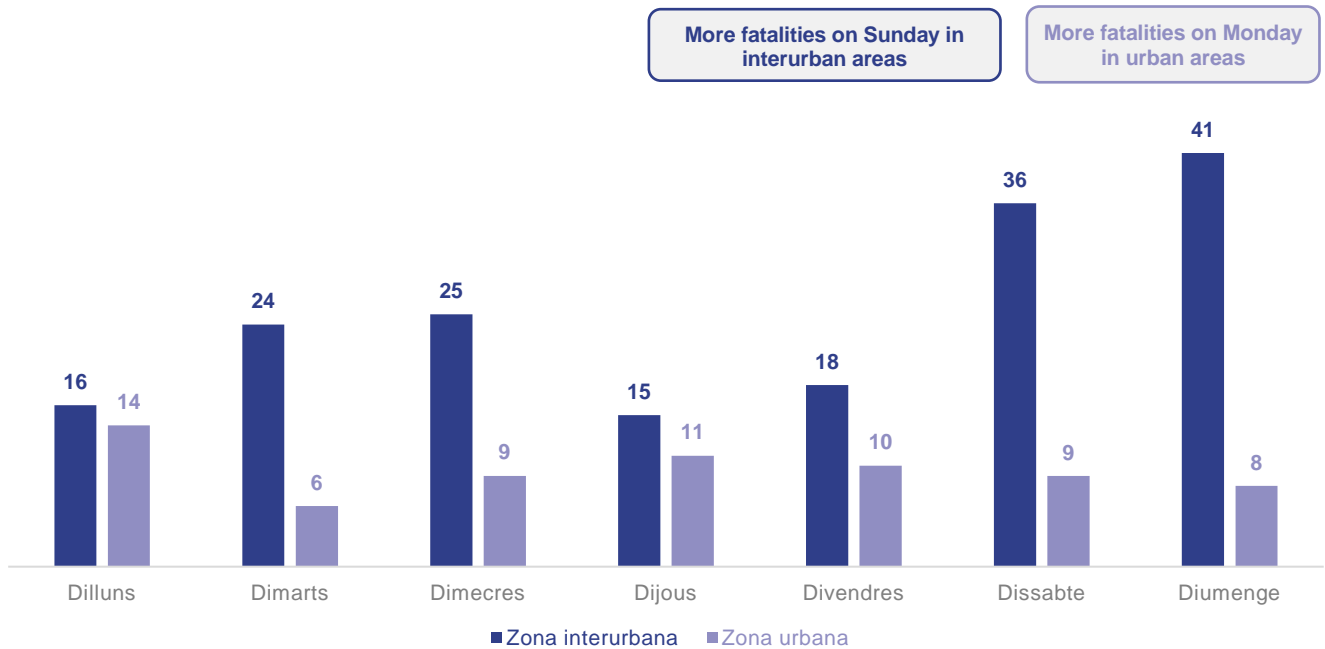
Trend in the number of fatalities within 24 hours by four-month period. 2010–2019
Urban areas



Day of the week

In 2019, in interurban areas, 44% of the fatalities happened on a weekend (Saturday and Sunday), when travel is non-essential. In urban areas, the percentage of fatalities on weekends was 25%.

Distribution of the number of fatalities within 24 hours by day of the week and area. 2019



Time of day

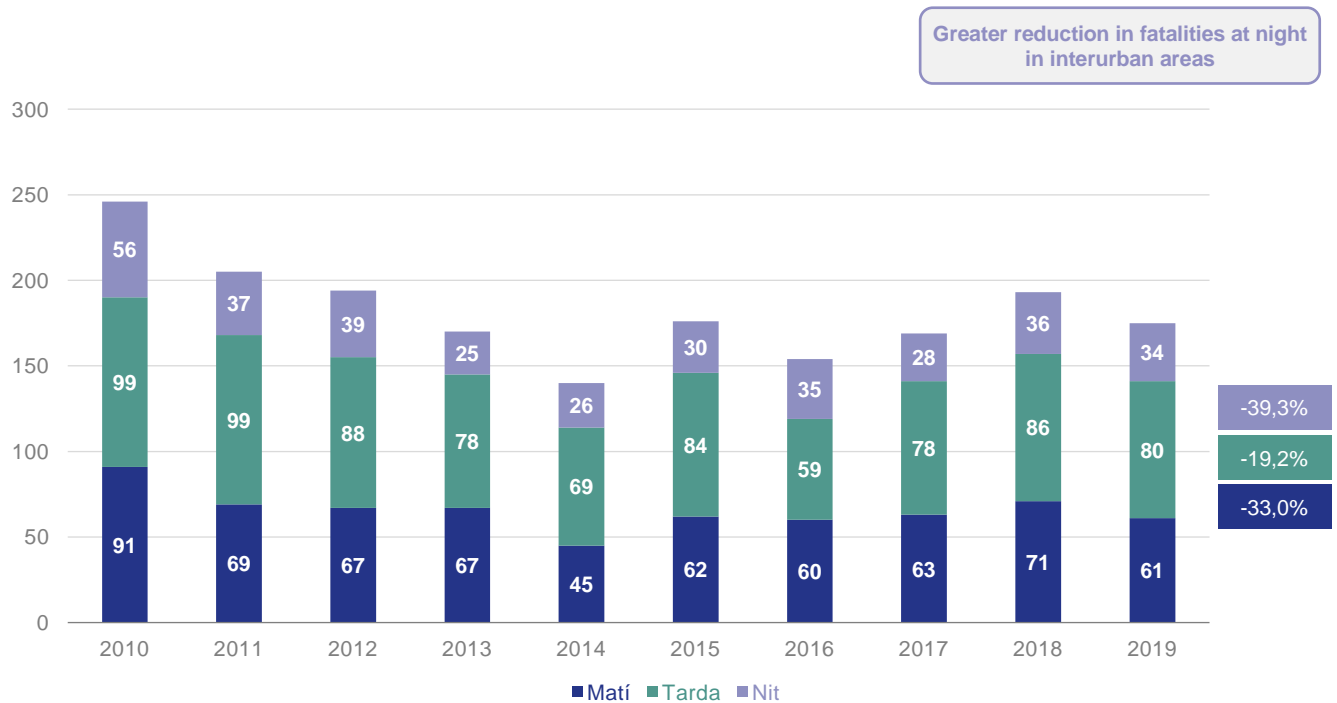
The distributions of casualties by time of day are shown below, bearing in mind that:

- Morning: 6.00–14.00
- Afternoon: 14.00–22.00
- Night: 22.00–6.00

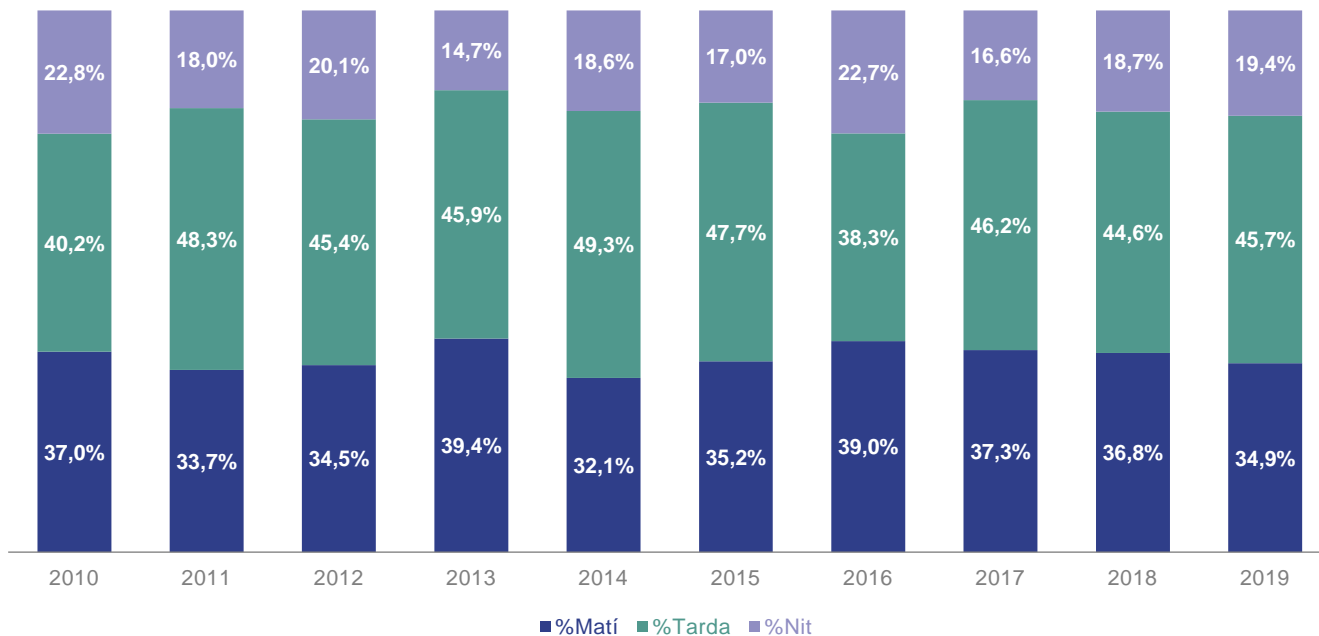
In interurban areas, the greatest proportion of fatalities within 24 hours occurred in the afternoon, and an increase has been observed since 2016, which went from 59 casualties in 2016 to 80 in 2019. But in comparison with 2018, there were 6 casualties less.

The most significant reductions during the 2010–2019 period were seen in the morning and night, which decreased by 33% and 39.3%, respectively.

Fatalities within 24 hours by time of day. 2010–2019.
Interurban areas

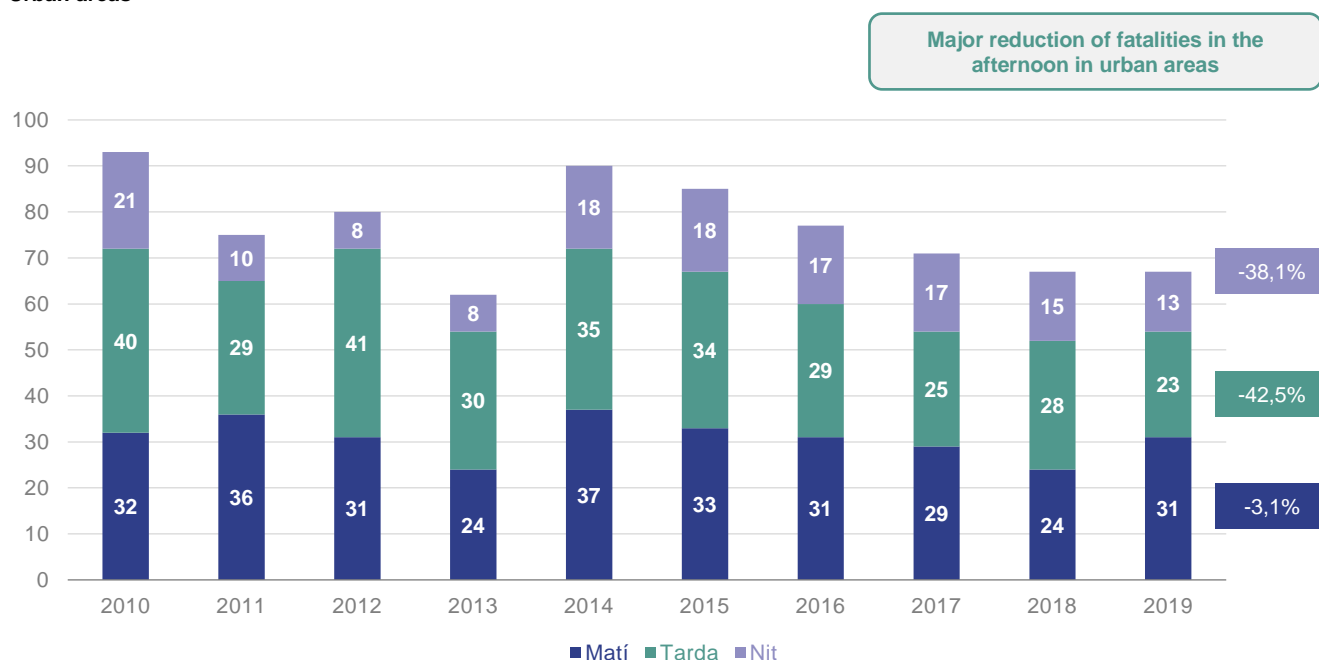


Proportion of fatalities within 24 hours by time of day. 2010–2019.
Interurban areas

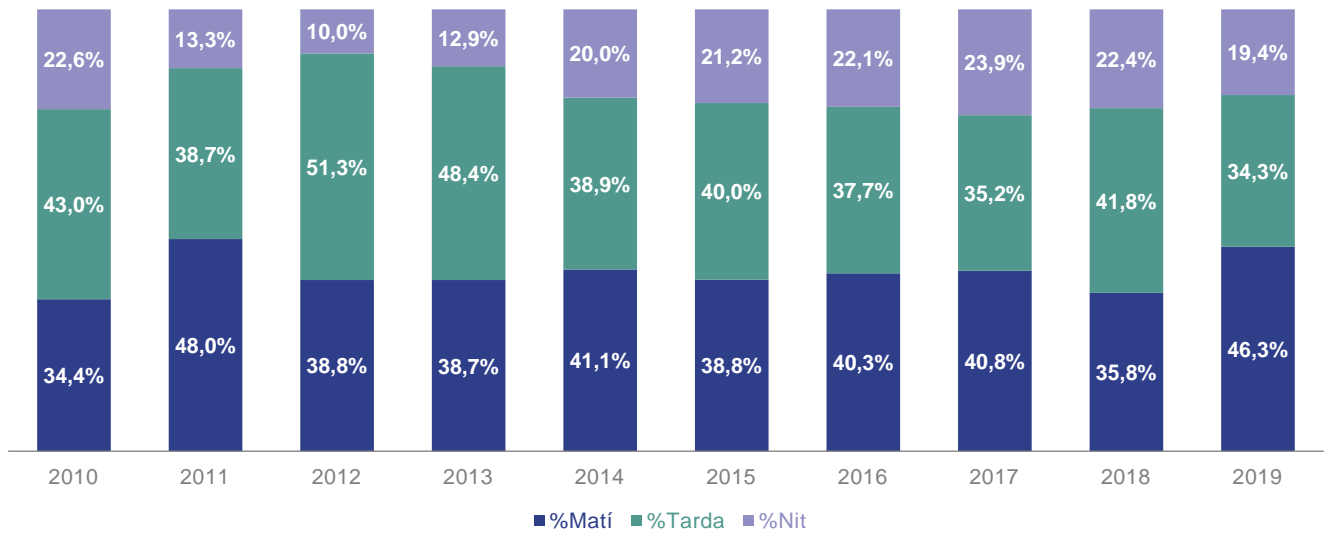


In urban areas, the greatest proportion of fatalities within 24 hours gradually shifted from the afternoon to the morning. Thus, in 2019, 46.2% of fatalities occurred in the morning. During the 2010–2019 period, the number of fatalities decreased by 3.1% in the morning, 42.5% in the afternoon and 38.1% at night.

Fatalities within 24 hours by time of day. 2010–2019.
Urban areas



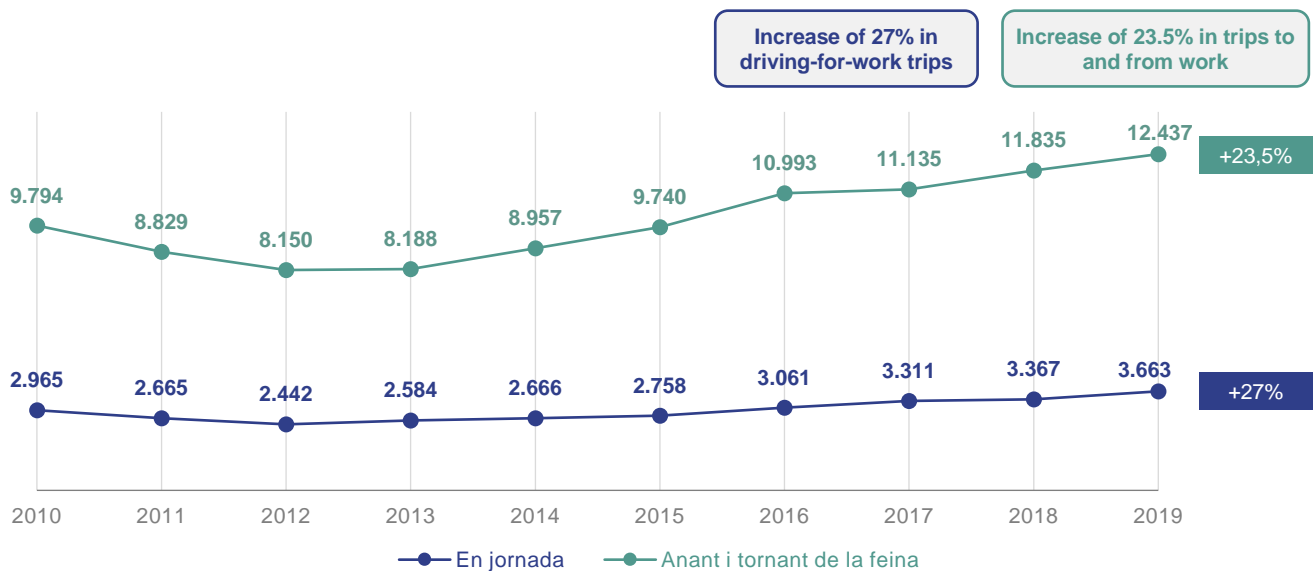
Proportion of fatalities within 24 hours by time of day. 2010–2019.
Urban areas



Work-related road traffic accidents

Many people travel for work, whether it's going to and from work or because they drive for work. The accident statistics available show that work-related road traffic accidents increased by 27% for driving-for-work trips and by 23.5% for trips to and from work for the 2010–2019 period.

Trend in work-related road traffic accidents in Catalonia. 2010–2019



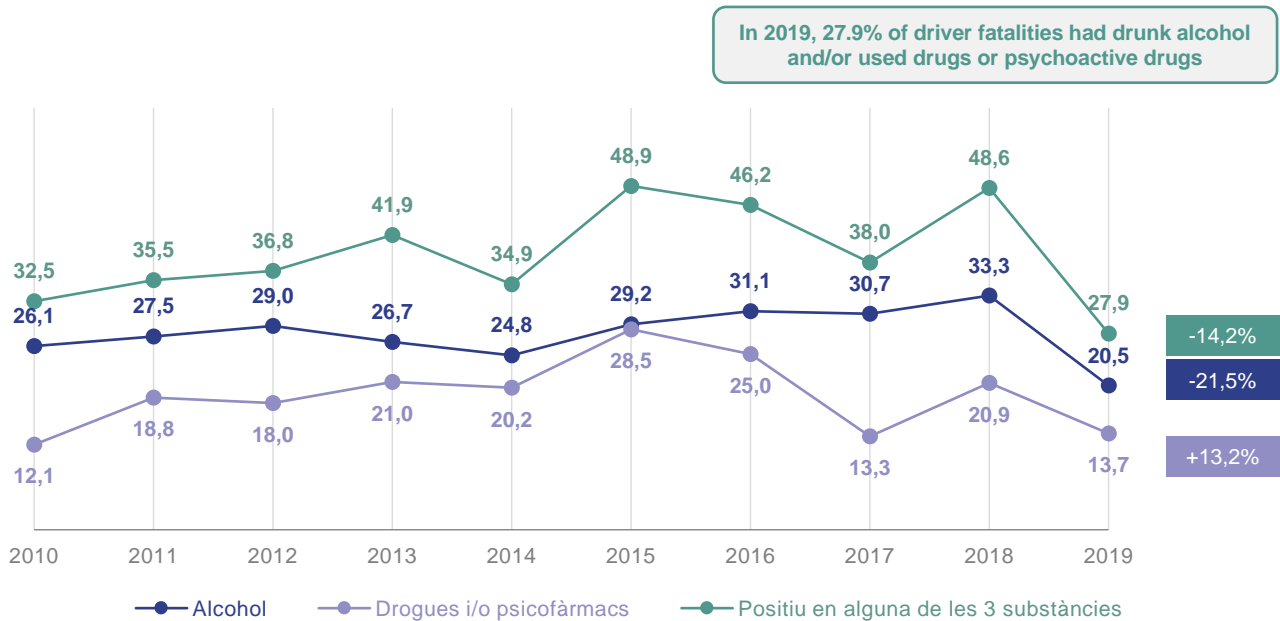
Concurrent risk factors

Alcohol and other drugs

The percentage of drivers who tested positive for alcohol, other drugs and psychoactive drugs in driver fatalities greatly increased during the 2010–2018 period, but in 2019 this figure fell for the first time in nine years.

In 2019, 27.9% of driver fatalities in road traffic accidents tested positive for one of the three substances, whereas this figure was 32.5% in 2010.

Trend in toxicology (% drivers killed with substances detected). 2010–2019.



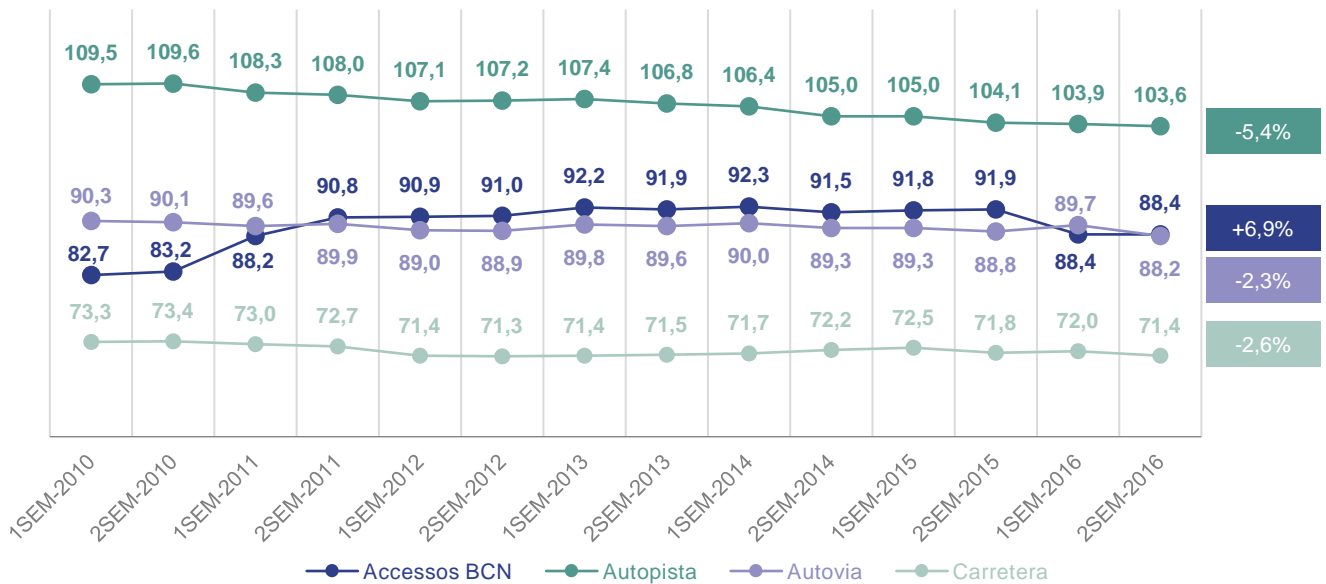
Speeding

In general, the average speed on interurban roads has steadily decreased since 2010, particularly on motorways, due to the implementation of speed control measures.

Driving at inappropriate speeds was the cause of 7.36% of the accidents on Catalan roads in 2019 according to the 2019 Statistical Yearbook of Traffic Accidents in Catalonia.

Below is a graph with the trend in average speeds in the Catalan interurban network with the latest data available:

Trend in average speeds in the interurban network. Catalonia 2010–2016

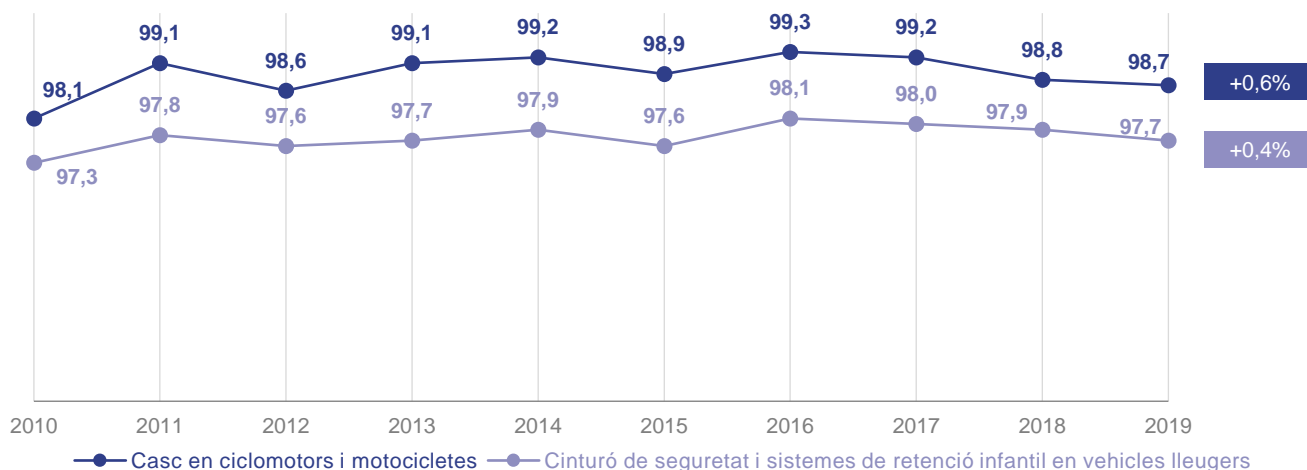


As regards urban areas, speed limits were reduced in line with the latest legislation changes in this regard and traffic calming measures extended over a broader area in urban settings. The aim was to make towns and cities more suited to the people living there and to promote more sustainable modes of transport in order to reduce pedestrian knock-downs and improve quality of life.

Passive car safety features

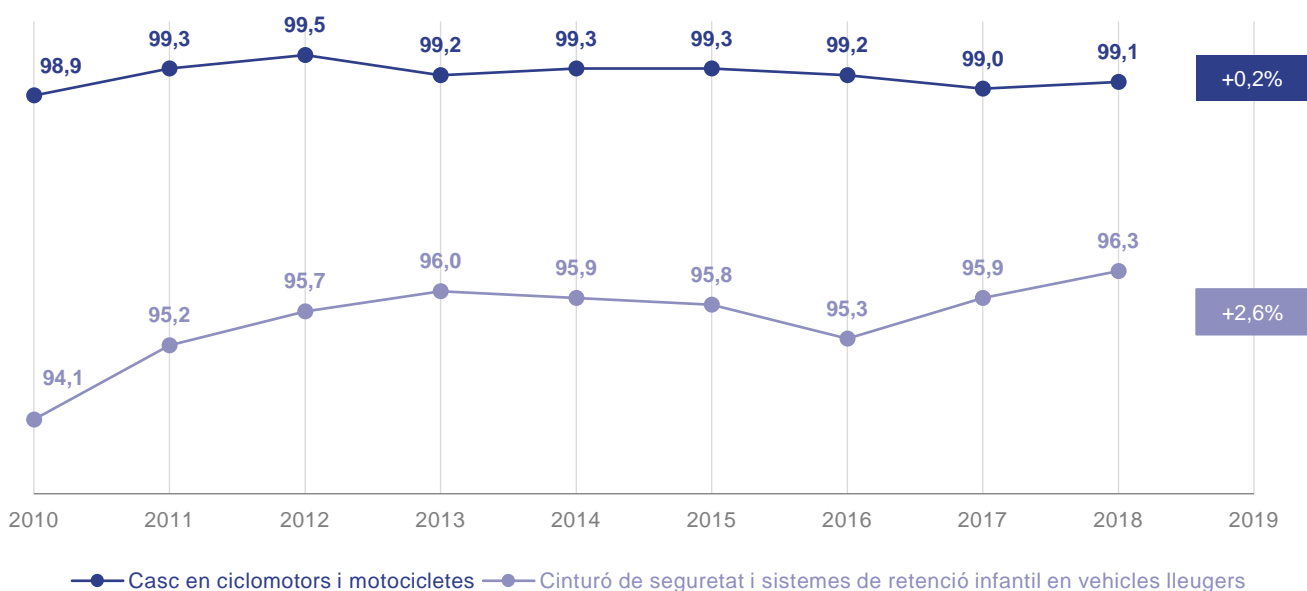
The use of passive car safety features is extremely widespread. The graph below shows their use in interurban areas during the 2010–2019 period.

Use of safety devices among accident victims. 2010–2019.
Interurban areas



The use of seat belts and child restraint systems went up 2.4 percentage points in urban areas.

Use of safety devices among accident victims. 2010–2019.
Urban areas



Distractions

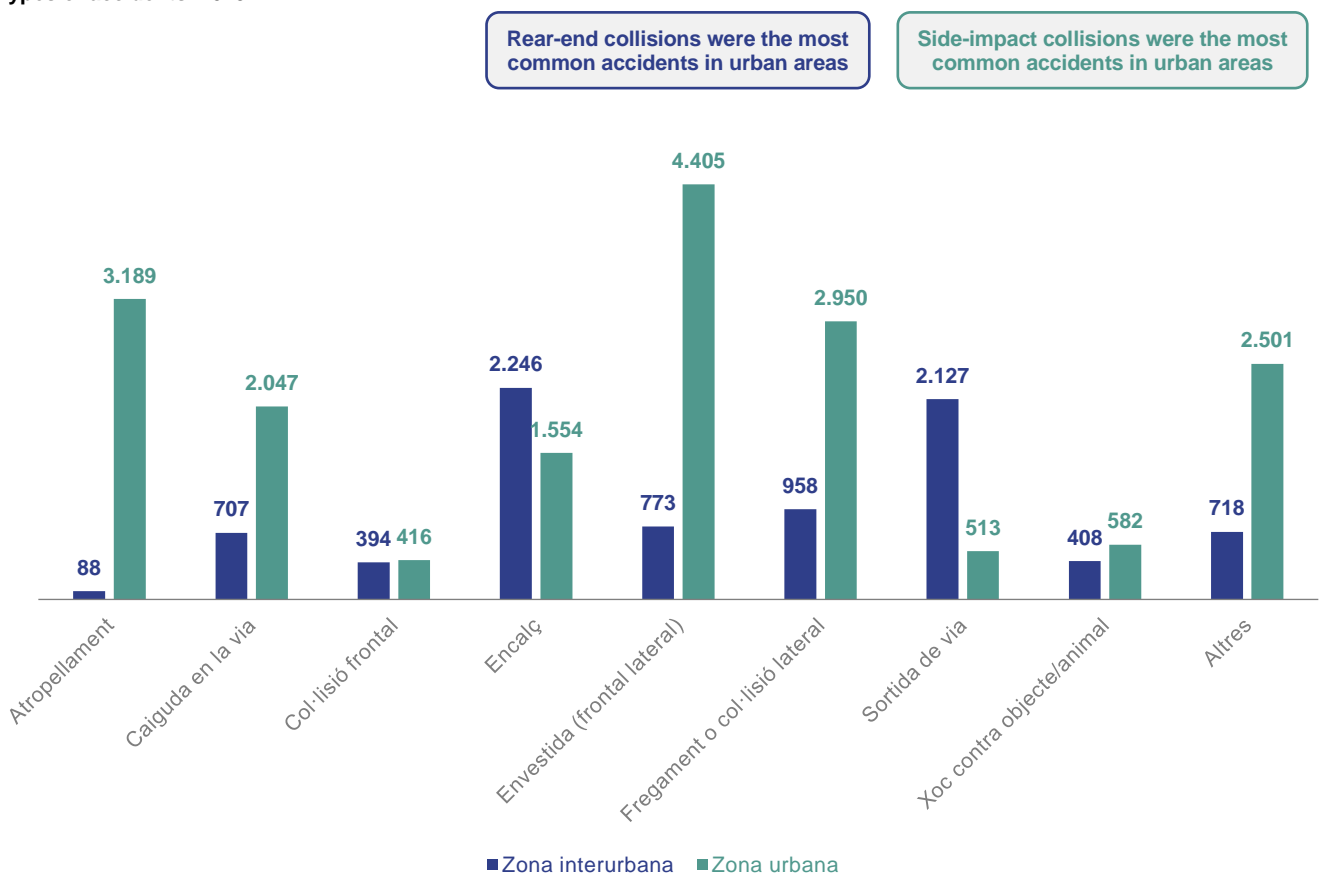
Distractions are an increasingly common factor in road traffic accidents, particularly those related to using mobile phones while driving. According to the latest data available, as a concurrent risk factor, distractions caused 22% of the road traffic accidents that took place in 2018. This factor, with an upward trend over the past decade, increased by half a percentage point compared with the previous year in 2019, standing at 22.5%.

The Catalan Traffic Service (SCT) is making every effort to reduce this risk factor, which is very widespread among the population and continues to rise, which is why it's essential to tackle this in a specific way. The SCT coordinates with the traffic police to carry out two annual distracted driving monitoring campaigns. Distractions due to visual displays that take the driver's focus away from their driving, whether they're mobile phones or different communications systems, are mainly assessed.

Types of accidents

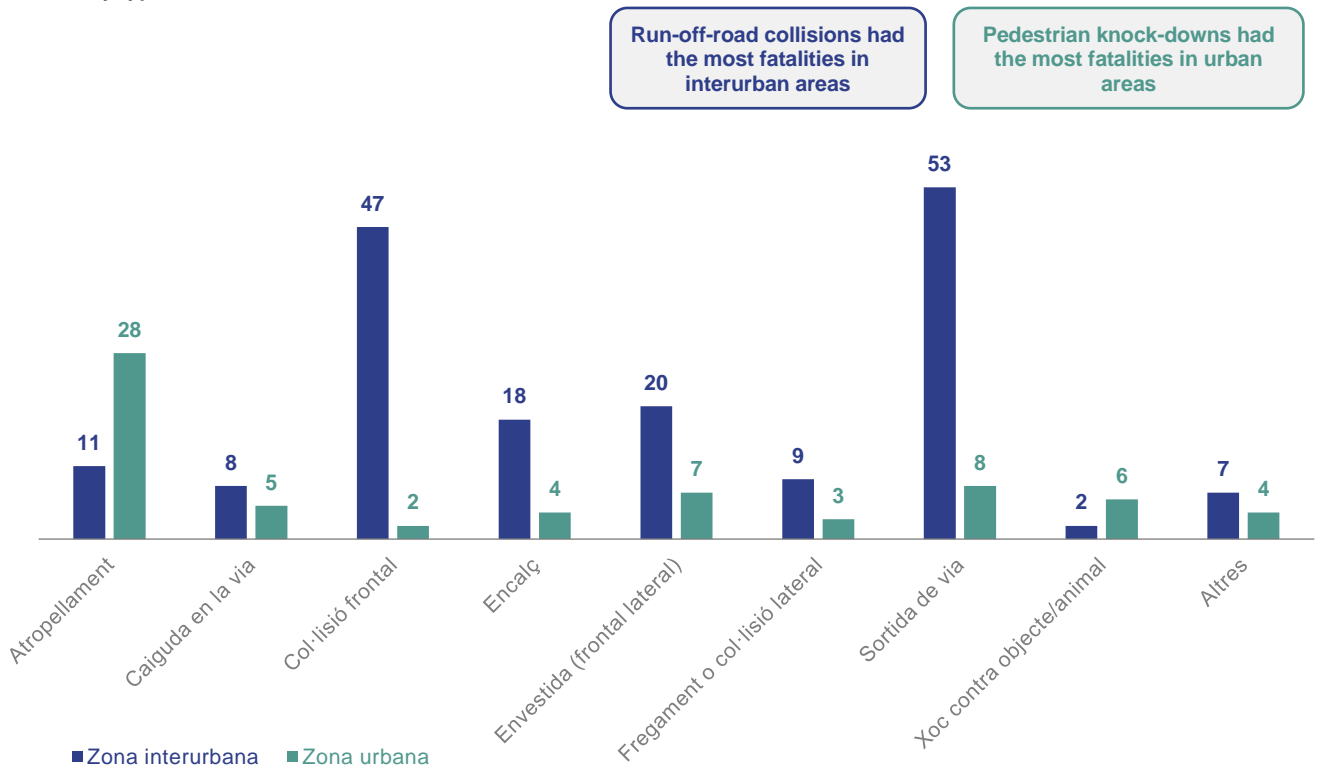
After analysing data from 2019, the most predominant road traffic accidents in interurban areas were rear-end collisions and run-off-road collisions. In contrast, side-impact collisions, pedestrian knock-downs and sideswipe collisions were more numerous in urban areas.

Types of accidents. 2019



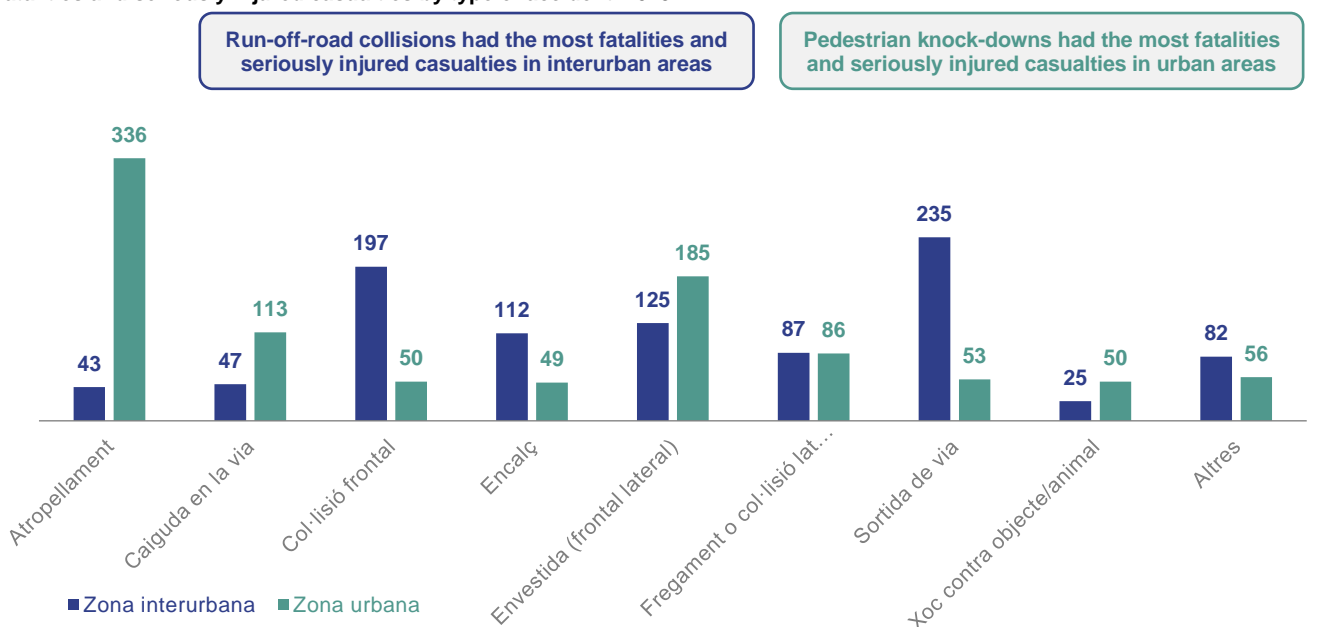
As regards fatalities, in interurban areas, the most dangerous road traffic accidents were head-on collisions and run-off-road collisions. In contrast, pedestrian knock-downs stood out in urban areas.

Fatalities by type of accident. 2019



Taking into account both fatalities within 24 hours and seriously injured casualties, in interurban areas, the most dangerous road traffic accidents continued to be head-on collisions and run-off-road collisions. In contrast, pedestrian knock-downs and sideswipe collisions stood out in urban areas.

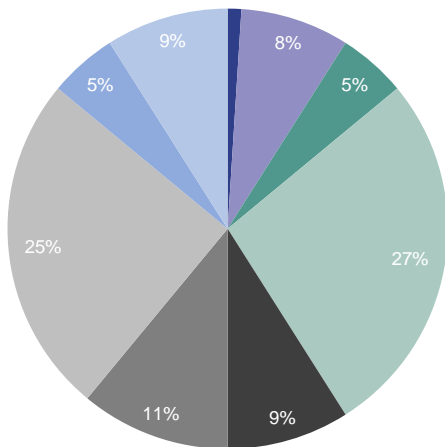
Fatalities and seriously injured casualties by type of accident. 2019



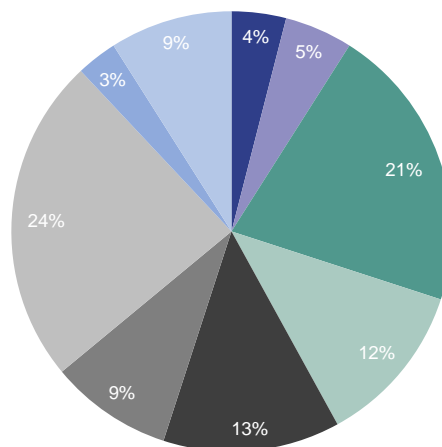
In interurban areas, head-on collisions only accounted for 5% of all road traffic accidents, but 21% of the casualties.

In contrast, rear-end collisions were the most common road traffic accidents (27%), although they did not account for a high number of casualties (12%).

Types of accidents areas



Fatalities and seriously injured casualties. Interurban

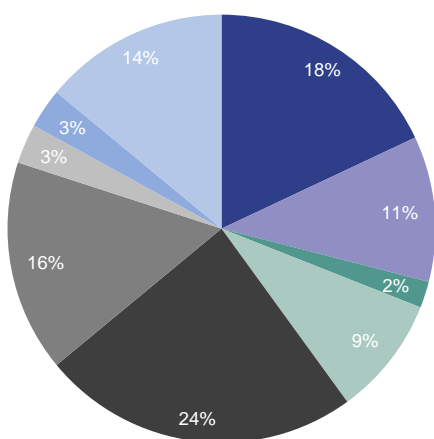


- Atropellament
- Caiguda en la via
- Col·lisió frontal
- Encaç
- Envestida
- Fregament
- Sortida de via
- Xoc contra objecte/animal
- Altres

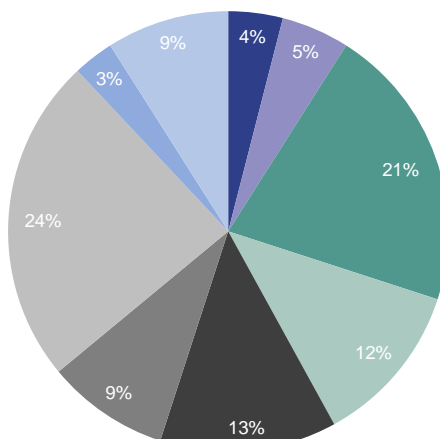
In urban areas, pedestrian knock-downs only accounted for 18% of all road traffic accidents, but 34% of the casualties.

In contrast, sideswipe collisions accounted for 16% of the total number of road traffic accidents, but only 9% of the casualties.

Types of accidents



Fatalities and seriously injured casualties. Urban areas



- Atropellament
- Caiguda en la via
- Col·lisió frontal
- Encaç
- Envestida
- Fregament
- Sortida de via
- Xoc contra objecte/animal
- Altres

CONCLUSIONS



Victimes mortals i ferides greus

Fatalities and seriously injured casualties

In 2019, 242 fatalities within 24 hours were recorded: 175 in the interurban road network and 67 on urban roads. **Compared with 2010, fatalities within 24 hours decreased by 28.6%**, with the same reductions in interurban areas as urban areas (28%).

When adding the number of fatalities within 24 hours and seriously injured casualties, there were slight decreases in urban areas (-8.4%) and more considerable ones in interurban areas (-25.4%) compared with 2010.



Sinistres amb víctimes

Severity

The number of road traffic accidents with casualties has largely remained the same over the past few years, but there was a 10.3% increase when 2019 was compared with 2010. More than twice as many road traffic accidents occurred in urban areas compared with interurban areas. The increase in the number of accidents with casualties was mainly due to **the increase in slight road traffic accidents**, which increased by 12.4% as against 2010. In 2019, slight road traffic accidents accounted for 93.5% of all road traffic accidents with casualties (91.8% in 2010).



Sinistres lleus

Since 2010, a reduction in the ratio of fatalities within 24 hours to total accidents with casualties – both in urban areas (-36.7%) and interurban areas (-31.2%) – has been observed. A downward trend was seen again after the rise in interurban areas in 2018.



Ràtio víctimes mortals

Mode of transport and vulnerable road user groups

In interurban areas, passenger cars/4x4 vehicles had the most fatalities within 24 hours, with 85 casualties in 2019 and a 40.1% decrease compared with 2010, offsetting the upturn in 2018.

In urban areas, the 63.7% drop in fatalities within 24 hours travelling in passenger cars and 4x4 vehicles during the 2010–2019 period stood out.

As regards fatalities and seriously injured casualties, 2019 saw the lowest figure for the 2010–2019 period involving passenger cars and 4x4 vehicles, with a 30.3% drop compared with 2010 and a 27.3% decrease in HGVs and vans.

The **high-risk groups that were identified** were: **pedestrians over 74, pedal cyclists aged 45–64, motorcyclists aged 25–54, moped riders aged 15–24, passenger car and 4x4 vehicle occupants aged 15–24 and heavy vehicle occupants aged 35–54.**



Victimes mortals turisme / tot terreny



Victimes mortals camió i furgoneta



Victimes mortals i ferides greus



Sinistre zona urbana = Atropellament



Victimes mortals i ferides greus +74 anys



Victimes mortals i ferides greus



Victimes mortals en zona interurbana



Victimes mortals en zona urbana



Victimes mortals i ferides greus entre 45 i 54 anys

Pedestrians

Pedestrian fatalities dropped by 36.8% in 2019 compared with 2010 in **interurban areas** (from 19 to 12). The 44.4% reduction in fatalities and seriously injured casualties (from 81 to 45) is also worth highlighting.

In urban areas, pedestrian fatalities stood at 29 in 2019. For the 2010–2019 period, the drop in pedestrian fatalities was quite remarkable, with a reduction of 35.6% (from 45 to 29). By comparison, the decrease in fatalities and seriously injured casualties was much less (-13.5%).

The age band with the most pedestrian fatalities and seriously injured casualties comprised people over 74.

95% of road traffic accidents resulting in a pedestrian fatality or serious injury were due to pedestrian knock-downs. And almost 90% of these accidents took place in urban areas.

Pedal cyclists

Bicycle fatalities in **interurban areas** rose from 7 in 2010 to 9 in 2019. As regards the number of fatalities and seriously injured casualties, the 32.1% rise for the 2010–2019 period (from 56 to 74) stood out.

In urban areas, the number of pedal cyclist fatalities increased from 1 to 5 compared with 2018 and remained constant in relation to 2010.

In contrast, bicycle fatalities and seriously injured casualties increased by 73.5% during the 2010–2019 period.

The group of young pedal cyclists aged 15–24 had the most fatalities, and the 45–54 age band had the most seriously injured casualties.

Motorcyclists

In 2019, motorcycle/moped fatalities in interurban areas stood at 49, increasing by 19.5% compared with 2010. There was a slight decrease in seriously and fatally injured motorcycle/moped casualties in 2019 in relation to 2020, although it was quite low – 5%.

In urban areas, as regards fatalities, there was a significant increase compared with 2018, although there was an overall decrease of 6.9% for the entire 2010–2019 period.

The reduction in motorcycle and moped fatalities and seriously injured casualties for the aforementioned period was 8.1%.

The most vulnerable group among motorcyclists comprised people aged 45–54, although the number of fatalities and seriously injured casualties was also quite high among those aged 25–44.



Victimes mortals homes



Victimes mortals dones



Victimes mortals i ferides greus en ciclistes i motoristes homes



Els homes cometen infraccions més perilloses que les dones



Victimes mortals a tot Catalunya

Gender perspective

There were **3.8 times as many male casualties as female ones**. The increase in fatalities within 24 hours since 2016 was due to men (28.9%), as female fatalities decreased.

In interurban areas, there were three times as many seriously injured male casualties as female ones. By comparison, in urban areas, this proportion was slightly more than double.

Comparing this with mobility data (EMEF 2019), we can see that the ratio of the number of fatalities per trip was slightly less in women than in men.

In pedestrians, the proportions of older casualties stood out. Men over 74 represented 3.7% of the population; however, they accounted for 13.1% of the fatalities. With regard to women, 13.4% were casualties over 74 despite the fact that they only accounted for 5.6% of the population.

The greatest proportion of pedal cyclist fatalities and seriously injured casualties was found among men aged 35–64 (45.8%). Despite the fact that men ride bicycles twice as often as women, there were six times as many fatalities and seriously injured casualties among men as women.

Considering **motorcycle and moped fatalities and seriously injured casualties, casualties were overwhelmingly male**, particularly in the 45–54 age band (22.3% of the casualties) and the 25–34 age band (18.1%). As in the case of bicycles, men ride motorcycles four times as often as women, and there were six times as many fatalities and seriously injured casualties among men as women.

In passenger cars/4x4 vehicles, generally speaking, there were more male casualties than female ones, although according to the Working Day Mobility Survey (EMEF) of 2019, men drive passenger cars 1.2 times more often than women and there are 1.6 times as many fatalities and seriously injured casualties among men as women.

In terms of the main driving offences committed in 2019, we saw that men commit more dangerous driving offences than women, such as those related to speeding, while women commit more document offences, such as those related to vehicle registration and technical conditions or compulsory insurance.

Location

In terms of provinces, the increase in fatalities within 24 hours in the **Barcelona** interurban network since 2016, which went from 48 to 80 (despite the overall decrease of 7% for the 2010–2019 period).

In **Tarragona**, in 2017, there were 29 fatalities within 24 hours – one of the lowest figures during the period – but in 2018, there was a rise in the mortality rate with 46 fatalities. In 2019, this figure dropped to 40.

In **Lleida**, fatalities in 2019 decreased to 28 – down 24.3% compared with 2010.

In **Girona**, fatalities were greatly reduced, with only 20 in 2014, the lowest for this period. The reduction for the 2010–2019 period was the most significant, with only 58.5%.

Time period

In interurban areas, generally speaking, the four-month period with the highest number of casualties was the second one, covering the summer months. What's more, 2018 was the worst summer recorded since 2011, and in 2019, this figure dropped again.

In 2019, in interurban areas, 44% of the fatalities happened on a weekend (Saturday and Sunday), when travel is non-essential.

In interurban areas, the greatest proportion of fatalities within 24 hours took place in the afternoon. In urban areas, for 2016 and 2017, more than 40% of the fatalities happened in the morning, whereas in 2018, almost 42% were in the afternoon. In 2019, the previous trend came back, and 46.3% of the casualties occurred in the morning.

Work-related road traffic accidents

Work-related road traffic accidents **increased by 27% for the 2010–2019 period** for driving-for-work trips and by 23.5% for trips to and from work.

Concurrent risk factors

The percentage of drivers who tested positive for alcohol, other drugs and psychoactive drugs in driver fatalities greatly increased during the 2010–2018 period, but in 2019 this figure fell for the first time in nine years. In 2019, **27.9% of driver fatalities in road traffic accidents tested positive** for one of the three substances. In 2010, this figure was 32.5%.

The use of passive car safety features is extremely widespread. The use of seat belts and child safety systems went up 2.4 percentage points in urban areas.

Speeding and distractions were the most notable risk factors to which particular attention should be paid in order to reduce accident rates. Installing speed cameras in the Catalan road network and carrying out speed control and distracted driving prevention campaigns, which are done by the traffic police in coordination with the SCT on an annual basis, constitute a good control mechanism for these risky behaviours.



Víctimes mortals a l'estiu en zona interurbana



Víctimes mortals en cap de setmana en zona interurbana el 2019



Accidents laborals



Positius 2010-2018



Positius 2019



Excés de velocitat i distraccions



Atropellaments
i col·lisió frontal

Types of accidents

Pedestrian knock-downs and head-on collisions are the most serious road traffic accidents. In urban areas, pedestrian knock-downs only accounted for 18% of all road traffic accidents, but 34% of the casualties in 2019. In contrast, sideswipe collisions accounted for 16% of the total number of road traffic accidents, but only 9% of the casualties.

In interurban areas, head-on collisions only accounted for 5% of all road traffic accidents, but 21% of the casualties. Run-off-road collisions account for 25% of accidents and 24% of casualties and have the most fatalities among all types of road traffic accidents. In contrast, rear-end collisions were the most common road traffic accidents (27%), although they did not account for a high number of casualties (12%).

ACCIDENT STATISTICS FOR 2020

This section analyses accident statistics for 2020, taking into account accidents with casualties in interurban and urban areas, thereby making it possible to observe the variability in accident statistics for 2020 compared with 2019. The data for 2020 will also be studied in relation to the trend in contrast with 2010.

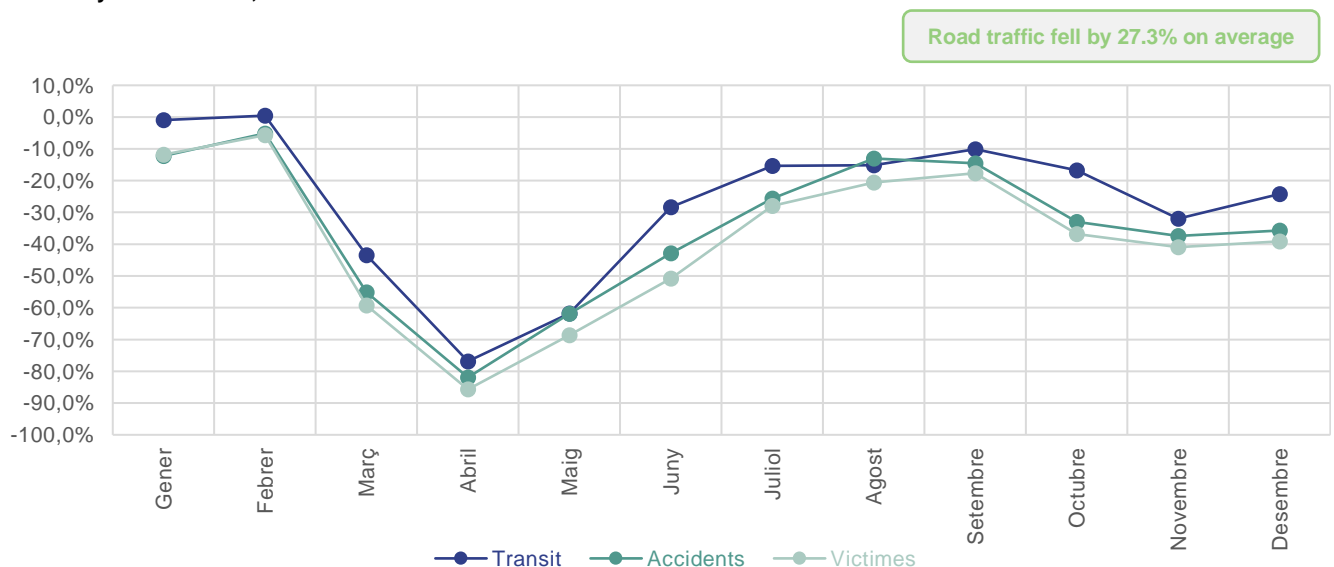
When analysing the data for 2020, it's essential to point out the exceptional nature of 2020 as a result of the COVID-19 pandemic and its effects on mobility, as well as how these have brought about a reduction in road traffic accident rates. Thus, the data for 2020 was greatly conditioned by the restrictions on mobility that marked 2020 as an atypical and unrepresentative year in terms of mobility patterns and indirectly on accident rates, which cannot be compared with those from other years.

This is why it's necessary to analyse its effects on mobility patterns and to pay particular attention to the trend in these changes to see whether the new mobility trends are here to stay once the social and health crises resulting from the pandemic have been resolved.

According to the data available to the Catalan Traffic Service, in 2020, there was a decrease in mobility by 25.81% in relation to 2019, in both ordinary commuting and non-essential travel related to leisure on weekends and holidays.

As we mentioned, the decrease in road traffic accidents in 2020 was partly due to the fall in the amount of traffic as a result of the COVID-19 pandemic. To analyse this effect, the graph below shows data on road traffic in 2020 from the SCT corresponding to different points on the Catalan road network:

Variability in road traffic, accidents and casualties. 2019–2020



The data shows that, overall, road traffic in the Catalan road network analysed fell by 27.3% on average, with lows in April and May of -77% and -62%, respectively.

The decrease in the number of road traffic accidents and total casualties was much greater, by -35.3% and -39.3%, respectively, so we can conclude that the trend in the reduction of accident rates was quite positive in 2020.

By day of the week, as the table below shows, this reduction was much higher on Saturday and Sunday:

	% var 2019–2020
Monday–Thursday	-20.71%
Friday	-24.95%
Saturday	-38.62%
Sunday	-41.41%

In terms of work-related mobility, the reduction in ordinary commuting as a result of the widespread implementation of remote working is worth pointing out. This had subsequent effects on the reduction of accident rates and the improvement of traffic congestion in town centres. For this reason, work-related accident rates in 2020 was greatly affected and fell by 35.6% compared with 2019.

	2010	2019	2020	% var 2019–2020	% var 2010–2020
Work-related road traffic accidents	12,759	16,100	10,362	-35.6%	-18.8
Driving-for-work trips	2,965	3,663	2,488	-32.1%	-16.1%
Trips to and from work	9,794	12,437	7,874	-36.7%	-19.1%

At the same time, changes in mobility patterns were also seen in towns and cities, with widespread use of more sustainable modes of mobility such as significant increases in the use of bicycles and e-scooters for daily commuting. In relation to these modes of transport, it will be necessary to analyse whether using them on a larger scale will lead to an increase in their accident rates.

In terms of accident statistics, the results of the number of road traffic accidents with casualties in 2020 and compared with 2019 and 2010 are shown below:

	2010	2019	2020	% var 2019–2020	% var 2010–2020
Accidents	24,084	26,576	17,779	-33.1%	-26.2%
Fatalities within 24h	339	242	159	-34.3%	-53.1%
Seriously injured casualties	2,007	1,689	1,175	-30.4%	-41.5%
Fatalities within 24h and seriously injured casualties	2,346	1,931	1,334	-17.7%	-43.1%
Slightly injured casualties	30,271	33,055	21,400	-35.3%	-29.3%
Total casualties	32,617	34,986	22,734	-30.3%	-35%

In 2020, there was a significant reduction in both the number of road traffic accidents and the number of casualties compared with 2019, by 33.1% and 30.3%, respectively. Fatalities within 24 hours fell by 34.3%, while the number of fatalities and seriously injured casualties decreased by a lesser extent – 17.7%.

In comparison with 2010, the reduction was greater than 50% as regards fatalities within 24 hours (-53.1%), while the number of fatalities within 24 hours and seriously injured casualties went down by 43.1%.

The table below shows the data by area:

	2010	2019	2020	% var 2019–2020	% var 2010–2020
Fatalities within 24h in interurban areas	246	175	107	-38.9%	-56.5%
Fatalities within 24h in urban areas	93	67	52	-22.4%	-44.1%
Fatalities within 24h and seriously injured casualties in interurban areas	1,278	953	627	-34.2%	-50.9%
Fatalities within 24h and seriously injured casualties in urban areas	1,068	978	707	-27.7%	-33.8%

In interurban areas, it is worth pointing out the reduction by 38.9% in the number of fatalities in 2020 compared with 2019. When contrasted with 2010, the drop was so much higher – by 56.5%. As regards fatalities and seriously injured casualties, the figure decreased by 34.2% as against 2019 and also by more than 50% in contrast with 2010.

In urban areas, the downturn was a little less – by 22.4% for fatalities in 2020 compared against 2019 and by 44.1% in relation to 2010. If we consider fatalities and seriously injured casualties, the decline was by 27.7% versus 2019 and by 33.8% as opposed to 2010.

As regards accident rates by day of the week, and in relation to the changes in ordinary commuting patterns as a result of the implementation of remote working, the increase in mobility on Thursday and Monday meant a rise in accident rates on these days, as well as on weekends, as shown in the table below. It shows the distribution of fatalities by day of the week in interurban areas:

Day of the week	% fatalities in 2010	% fatalities in 2019	% fatalities in 2020
Monday	8.9%	9.1%	17.8%
Tuesday	14.2%	13.7%	13.1%
Wednesday	11.4%	14.3%	5.6%
Thursday	11.8%	8.6%	12.1%
Friday	17.1%	10.3%	12.1%
Saturday	14.2%	20.6%	18.7%
Sunday	22.4%	23.4%	20.6%

As regards fatalities according to the mode de transport, the following was observed:

Mode of transport	% fatalities in 2010	% fatalities in 2019	% fatalities in 2020
Bicycles	2.8%	5.1%	7.5%
Motorcycles and mopeds	16.7%	28%	21.5%
HGVs and vans	13.8%	10.3%	15.9%
Walking	7.7%	6.9%	10.3%
Passenger cars and 4x4 vehicles	57.7%	48.6%	42.1%
Other vehicles	1.2%	1.1%	2.8%

The proportion of fatalities in passenger cars and 4x4 vehicle in comparison to the total number of road traffic casualties in interurban areas went down in 2020 versus both 2019 and 2010. In contrast, the proportion of fatalities increased in 2020 both for pedestrians and bicycle riders in relation to the two reference years while motorcycles and moped riders continued to be much higher in 2020 than in 2010 although the number was lower than in 2019.

Vulnerable road user groups

The accident rates for the following vulnerable road user groups are discussed below:

Pedestrians

As regards accident rates for pedestrians, there was a significant reduction in the number of fatalities in 2020 in comparison with 2019 (-46.3%) and in relation to 2010, when the decrease was even more remarkable (-65.6%).

In urban areas, the decline in the number of pedestrian fatalities was quite considerable in 2020 versus 2019, with a 62.1% drop. And in contrast to 2010, the downturn was even greater – 75.6% – whereas the reduction in fatalities and seriously injured casualties was less but also noteworthy – by 42.9% as opposed to 2019 and by 50.6% in contrast with 2010.



In interurban areas, the number of pedestrian fatalities was almost the same in 2020 as in 2019 (from 12 in 2019 to 11 in 2020), while the reduction was by 42.1% when compared with 2010. When adding fatalities and seriously injured casualties, the reduction in 2020 versus 2019 was not as high (-17.8%) while it was definitely much more remarkable as opposed to 2010 (-54.3%).

	2010	2019	2020	% var 2019–2020	% var 2010–2020
Pedestrians					
Fatalities within 24 hours	64	41	22	-46.3%	-65.6%
Fatalities in interurban areas	19	12	11	-8.3%	-42.1%
Fatalities in urban areas	45	29	11	-62.1%	-75.6%
Fatalities within 24 hours and seriously injured casualties	474	385	231	-40%	-51.3%
Fatalities and seriously injured casualties in interurban areas	81	45	37	-17.8%	-54.3%
Fatalities and seriously injured casualties in urban areas	393	340	194	-42.9%	-50.6%



Pedal cyclists

As regards pedal cyclist casualties, the number of fatalities in 2020 largely remained the same when compared with the two reference years: there was 1 fatality less than 2019 and 1 fatality more than 2010. As regards the number of fatalities and seriously injured casualties, there was an 11.3% decrease in 2020 compared with 2019, although there was a 34.3% rise versus 2010 with the exponential growth of bicycle use over the past decade.

In interurban areas, the number of pedal cyclists killed in 2020 more or less remained the same as opposed to the two reference years: 1 fatality less than 2019 and 1 fatality more than 2010. If we consider fatalities and seriously injured casualties, the decline was by 17.6% when comparing 2020 versus 2019 and less in comparison with 2010 (-8.9%).

In urban areas, fatalities remained the same in 2020 in relation to the two reference years, but fatalities and seriously injured casualties decreased by only 5.9% as against 2019 and increased by 66.3% when compared with 2010, in line with a more widespread implementation of cycling in towns and cities.

	2010	2019	2020	% var 2019–2020	% var 2010–2020
Pedal cyclists					
Fatalities within 24 hours	12	14	13	-7.1%	8.3%
Fatalities within 24 hours in interurban areas	7	9	8	-11.1%	14.3%
Fatalities within 24 hours in urban areas	5	5	5	0%	0%
Fatalities within 24 hours and seriously injured casualties	105	159	141	-11.3%	34.3%
Fatalities within 24 hours and seriously injured casualties in interurban areas	56	74	61	-17.6%	8.9%
Fatalities within 24 hours and seriously injured casualties in urban areas	49	85	80	-5.9%	66.3%



Motorcyclists

Motorcycle and moped fatalities were down by 36.8% in 2020 compared with 2019 and by 31.4% as opposed to 2010, while fatalities and seriously injured casualties decreased by 27.8% in comparison with 2019 and by 32.7% contrasted with 2010.

By zones, **in interurban areas**, we can see that fatalities among two-wheeled vehicle riders decreased by 36.8% versus 2019 and by 31.4% as opposed to 2010, whereas if we add the seriously injured casualties – bearing the two reference years in mind – the reductions were similar to the above: by 31.7% as opposed to 2019 and by 35.1% versus 2010.

In urban areas, there were smaller reductions than in interurban areas. The decrease was only by 7.4% for fatalities in 2020 compared with 2019 and by 13.8% versus 2010. In contrast, considering motorcyclist fatalities and seriously injured casualties, the reductions were much more significant – by 24.6% versus 2019 and by 30.7% in relation to 2010.

	2010	2019	2020	% var 2019–2020	% var 2010–2020
Motorcyclists					
Fatalities within 24 hours	70	76	48	-36.8%	-31.4%
Fatalities within 24 hours in interurban areas	41	49	23	-53.1%	-43.9%
Fatalities within 24 hours in urban areas	29	27	25	-7.4%	-13.8%
Fatalities within 24 hours and seriously injured casualties	851	794	573	-27.8%	-32.7%
Fatalities within 24 hours and seriously injured casualties in interurban areas	382	363	248	-31.7%	-35.1%
Fatalities within 24 hours and seriously injured casualties in urban areas	469	431	325	-24.6%	-30.7%



3. ROAD SAFETY STRATEGY 2021–2030

The Generalitat of Catalonia deployed the strategic road safety guidelines promoted by the foremost European and global authorities in line with Catalonia's Strategic Road Safety Plan 2014–2020 – a ground-breaking document by the Catalan government at the national level – through this year's approval of the **National Pact for Safe and Sustainable Mobility (PNMSS) 2021–2030 as the strategic document for the next decade.**

Ensuring the transition towards safe, sustainable, healthy, connected and automated mobility with a commitment to the fight against climate change and the improvement of air quality, which makes it possible to achieve Vision Zero – where no-one is killed or severely impaired for life – by 2050 is the goal and vision of PNMSS 2021–2030.

The Pact, in which road safety and sustainable mobility stakeholders (government agencies, companies and civil society) participate, aims to implement this new approach to mobility. It also considers the development and implementation of new technologies applied to the automotive industry, road infrastructure and traffic information and management systems to lead the transition process among all these stakeholders.

This entire framework hinges on the following **strategic objectives of the Pact:**

- Reduce fatalities by 50% for 2030 compared with 2020
- Achieve Vision Zero by 2050 for drivers who comply with the regulations and use the safety systems properly while driving on high-quality roads
- Promote more sustainable, healthier, more connected and more autonomous mobility
- Improve air quality

In this regard, the National Pact for Safe and Sustainable Mobility 2021–2030 seeks to respond to the challenges and make the most of the opportunities that arise in relation to the following context:

Challenges

Plateauing of the decrease in accident rates in the EU and Catalonia

Spatial dispersion of accidents with a lack of any significant concentration

Population ageing

Universal accessibility

Climate change

Social demand for traffic calming measures in town centres and on through roads

Opportunities

Increase in the use of sustainable modes of mobility

Emergence of private operators in real-time traffic information management

Increase in mobility service offerings (MaaS)

Technological breakthroughs applied to vehicles (autonomous vehicles) and roads

Gender perspective in mobility

As regards the structure, the PNMS 2021–2030 has been deployed with six main focus areas. These propose the main responses to these challenges and opportunities of the future by area. They were put forward to create a new mobility landscape that will usher in social and cultural changes in road safety and sustainable mobility with the utmost guarantees. In this regard, **the six strategic focus areas are as follows:**

- Focus area 1. Rethink public spaces towards safer and more sustainable mobility
- Focus area 2. Adapt road safety policies to the new characteristics of accident rates
- Focus area 3. Create an awareness-raising and educational strategy to get the whole of society involved
- Focus area 4. Create a forum for strategic cooperation among the different sectors involved in intelligent mobility
- Focus area 5. Set strategic objectives for infrastructure with regard to new mobility systems
- Focus area 6. Deploy the necessary structure for change management

The development of these focus areas, further classified into subareas and indicating the stakeholders involved – specified in the Pact – **is now summarised in this Road Safety Plan 2021-2023**, which is released every three years.

4. TARGETS OF THE ROAD SAFETY PLAN 2021–2023

The targets set by the Road Safety Plan 2021–2023 are in line with the global and European targets specified in the previous sections, with regard to the reduction of fatalities and seriously injured casualties in road traffic accidents. In the context of Catalonia, they're in line with the targets set by the National Pact for Safe and Sustainable Mobility 2021–2030, which set a road safety target to reduce fatalities by 50% for 2030 compared with 2020.

In line with this target, the Road Safety Plan 2021–2023 sets an **overall target of reducing fatalities by 15% for 2023 in relation to 2021**. Likewise, the aim is to influence road safety policies intended for the most vulnerable road user groups, which is why the following **specific targets** were set:



- Reduction of 12% in seriously injured casualties
- Reduction of 18% in children killed
- Reduction of 12% in fatalities due to collisions
- Reduction of 6% in pedal cyclist fatalities and seriously injured casualties
- Reduction of 3% in elderly fatalities
- Reduction of 6% in motorcyclist fatalities and seriously injured casualties
- Reduction of 6% in fatalities and seriously injured casualties in road traffic accidents during driving-for-work trips and trips to and from work



5. ACTIONS OF THE ROAD SAFETY PLAN 2021–2023

The Road Safety Plan (PSV) 2021–2023 sets out a number of actions to improve road safety in order to meet the targets set in this PSV, in line with the targets set in the National Pact for Safe and Sustainable Mobility (PNMSS) 2021–2030. It carries out a prior analysis of the accident rates and the main factors and high-risk groups involved, as well as refers to the social, technological and economic contexts, that is, the challenges and opportunities in the mobility sector in order to achieve safer and more sustainable mobility.

The specific targets set, as well as the actions that are to be carried out in the Road Safety Plan 2021–2023, is based on the following high-risk groups that were detected beforehand:

- Elderly pedestrians over 74
- Pedal cyclists in general, particularly those aged 45–64
- Motorcyclists in general, particularly those aged 25–54
- Young people aged 18–24 in passenger cars
- Heavy vehicle drivers aged 35–54

There will also be a clear impact on risk factors in driving, particularly on distractions (use of mobile phones, tablets, sat-navs, fatigue, etc.), as well as the use of alcohol and other drugs, speeding, monitoring of passive safety systems, etc.

Although pedestrian knock-downs in urban areas have not increased as much as the other types of road traffic accidents with vulnerable road user groups involved, they continue to be a serious problem as they mainly affect the elderly due to their vulnerability. The gradual implementation of 30 km/h speed limits across many cities are expected to have positive effects in terms of reducing this accident rate.

The steady rise of road traffic accidents with fatalities and seriously injured casualties among two-wheeled vehicle riders, particularly in the case of motorcyclists both in urban areas and in interurban areas, is of particular concern.

The increase in road traffic accidents involving bicycles is mainly due to the sharp increase in the number of trips made using this mode of transport. In urban areas, it will be necessary to continue building segregated cycling lanes and reminding bicyclists to wear protective gear. In interurban areas, efforts must be made to find alternative routes and to ensure safety on roads that must be shared by different types of users.




ACTIONS OF THE PSV 2021–2023

The actions that follow are grouped into six focus areas according to the National Pact for Safe and Sustainable Mobility 2021–2030.

FOCUS AREA	Name
1	Rethink public spaces towards safer and more sustainable mobility
2	Adapt road safety policies to the new characteristics of accident rates
3	Create an awareness-raising and educational strategy to get the whole of society involved
4	Create a forum for strategic cooperation among the different sectors involved in intelligent mobility
5	Set strategic objectives for infrastructure with regard to new mobility systems
6	Deploy the necessary structure for change management

The actions are shown according to the theme addressed and are sorted by the relevant focus area and subarea they fall under first, in accordance with the structure of the aforementioned PNMSS 2021–2030, and then by a specific classification by theme.

The schedule for the actions (2021–2023) is represented by the legend below:

Schedule	Year
	2021
	2022
	2023



FOCUS AREA 1

Rethink public spaces towards safer and more sustainable mobility

This focus area is centred on setting out guidelines for coexistence among the different people using public roads and reducing both air and noise pollution through traffic calming measures in urban environments. It gives priority to reducing vehicle speeds, applying urban planning measures and promoting more sustainable and healthier modes of mobility such as public transport and bicycles.

Additionally, this focus area also deals with new urban mobility trends that have emerged over the past few years, with the rise in personal mobility vehicles and, more specifically, e-scooters. Thus, emphasis is placed on facilitating coexistence among these new modes of transport and other road users, particularly pedestrians, and for their interaction not to lead to an increase in accident rates.

The actions corresponding to this focus area are included under the four subareas below:

- Strategies to **facilitate a modal shift** towards more sustainable means of transport and to encourage intermodality among different modes of transport
- Initiatives to **reduce air and noise pollution**
- **New urban mobility trends.** Personal mobility vehicles and shared vehicles
- **Urban planning** and adaptation of infrastructure to a greener and healthier city model

1.1. Strategies to facilitate a modal shift towards more sustainable means of transport and to encourage intermodality among different modes of transport

With the aim of promoting safe, active and sustainable mobility, different measures are proposed to encourage the use of safe, active and sustainable modes of transport, promoting the use of bicycles, personal mobility vehicles and safe pedestrian mobility.

In relation to bicycles, the aim is to promote their use, as well as the extension of safe cycling lanes and the creation of high-capacity cycle parking spaces at railway and public transport stations in order to promote intermodality.

In terms of public transport, a safe, affordable, accessible and sustainable system must be provided for everyone. It's necessary to provide access to public transport in major cities and carry out actions to improve intermodality: complementarity of bus or coach and train services and park and ride schemes, good accessibility on foot to interchanges and public transport stops,

real-time timetable and information technology management – all of these with the aim of encouraging the connection with sustainable modes of mobility.

Work-related mobility should also be more sustainable, which is why it's necessary to encourage workplace travel plans and the use of sustainable modes of transport when commuting and travelling for work. With regard to the distribution of goods in urban areas, it's important to make every effort to make it more efficient so that the e-commerce boom does not lead to an increase in negative externalities, such as traffic congestion increase and making air pollution worse.

Schedule	Actions and indicator	Stakeholders
■ ■ ■	<p>Promote bicycle mobility and the use of safe cycling lanes (1.1.01)</p> <p>Trend in the number of pedal cyclist fatalities and seriously injured casualties in urban areas</p> <p>Promotional actions carried out</p>	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities
■ ■ ■	<p>Draft a technical paper on vulnerable non-motorised user mobility (1.1.02)</p> <p>Drafting of a technical paper</p>	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities and Applus +IDIADA
■ ■ ■	<p>Promote modes of coexistence among pedal cyclists, drivers, motorcyclists, personal mobility vehicle users and pedestrians (1.1.03)</p> <p>Trend in the number of fatalities and seriously injured casualties by mode of transport</p>	SCT, local and supralocal authorities, road victims' associations and other associations and entities
■ ■ ■	<p>Improve goods transport management in urban areas and last-mile logistics (1.1.04)</p> <p>Improvement measures implemented</p>	Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities and entities
■ ■ ■	<p>Encourage workplace travel plans and the use of sustainable modes of transport in work-related mobility (1.1.05)</p> <p>Promotional actions carried out</p> <p>Number of workplace travel plans drafted</p>	SCT, Ministry of Business and Employment, Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities
■ ■ ■	<p>Promote the use of public transport over private transport (1.1.06)</p> <p>Trend in public transport use</p>	Ministry of the Vice-Presidency, Digital Policies and Territory, ATM, public transport service owners, local and supralocal authorities and associations
■ ■ ■	<p>Promote on-demand public transport by making timetables and frequency more flexible, particularly to facilitate travel to workplaces and industrial estates (1.1.07)</p> <p>Number of on-demand services available</p>	Ministry of the Vice-Presidency, Digital Policies and Territory, ATM, public transport service owners, local and supralocal authorities
■ ■ ■	<p>Create high-capacity cycle parking spaces at public transport stations (1.1.08)</p> <p>Number of cycle parking spaces created</p>	Ministry of the Vice-Presidency, Digital Policies and Territory, public transport service owners, local and supralocal authorities
■ ■ ■	<p>Increase park and ride facilities, private vehicle parking facilities at strategic points outside cities (1.1.09)</p> <p>Number of park and ride facilities created</p>	ATM, public transport service owners, local and supralocal authorities
■ ■ ■	<p>Promote activities for the encouragement of active transport within the framework of the Interdepartmental and Intersectoral Plan for Public Health (PINSAP) and provide support (1.1.10)</p> <p>Promotional actions carried out</p>	Ministry of Health, SCT, Ministry of Home Affairs, other ministries of the Generalitat, local and supralocal authorities and entities

Schedule	Actions and indicator	Stakeholders
■ ■ ■	<p>Prepare support materials for the Health Council for the promotion of active transport, road safety and road traffic injury prevention (1.1.11)</p> <p>Support materials created</p>	Ministry of Health, SCT, local and supralocal authorities, entities and associations

1.2. Initiatives to reduce air and noise pollution

The transport sector is responsible for a large part of the emissions of pollutant and greenhouse gases, which are harmful to health and the environment. This is why there's an urgent need to decarbonise this sector.

Furthermore, air pollution in urban areas is a major public health concern which needs to be dealt with urgently to improve air quality in towns and cities and reduce the high air and noise pollution levels that affect people's health and quality of life.

To this end, it's necessary to carry out actions such as consolidating the implementation of strategies for sustainable access to cities, incentivising a shift towards public transport, expanding Low Emission Zones, implementing restrictions on traffic for environmental reasons, as well as applying traffic management solutions during specific air pollution episodes.

Additionally, it's important to encourage vehicle fleet renewal, both for private vehicles and fleets for the transport of goods or passengers, with the addition of low emission vehicles that run on renewable fuels.

Schedule	Actions and indicator	Stakeholders
■ ■ ■	<p>Expand Low Emission Zones (LEZs) (1.2.01)</p> <p>Number of municipalities involved</p>	Ministry of Climate Action, Food and Rural Agenda, local and supralocal authorities
■ ■ ■	<p>Take part in working groups to monitor LEZs (1.2.02)</p> <p>Number of sessions held</p>	SCT, Ministry of Climate Action, Food and Rural Agenda, local and supralocal authorities
■ ■ ■	<p>Analyse and apply traffic management solutions during air pollution episodes, as well as improving road safety (1.2.03)</p> <p>Number of solutions applied</p>	SCT, Ministry of Climate Action, Food and Rural Agenda, local and supralocal authorities
■ ■ ■	<p>Promote electric vehicles and other vehicles that use renewable energy sources as an alternative to fossil fuels (1.2.04)</p> <p>Number of annual electric vehicle registrations</p>	Ministry of Climate Action, Food and Rural Agenda (ICAEN)

1.3. New urban mobility trends. Personal mobility vehicles and shared vehicles

In a relatively short period of time, new modes of mobility have emerged on the streets and pavements of towns and cities, with the boom of personal mobility vehicles such as e-scooters and the growing popularity of cycling for daily commuting standing out.

Royal Decree 970/2020 of 10 November – amending the General Traffic Regulations and the General Vehicle Regulations, regarding urban traffic measures, which entered into force on 2 January 2021 – defines personal mobility vehicles (PMVs) as vehicles with one or more wheels for the transport of one person and powered exclusively by electric motors for a maximum speed of between 6 and 25 km/h.

Like any other vehicle, PMVs cannot be used on pavements and pedestrian zones; neither can they be used on interurban roads, through roads, toll roads, motorways and urban road tunnels.

The presence of these vehicles may give rise to problems of coexistence in their interaction with other vehicles and pedestrians. It is therefore necessary to regulate their use and set out recommendations for the safe use of this type of vehicle in order to avoid a rise in accident rates, as well as carry out training activities on its use.

Alongside the emergence of these new personal mobility devices, the concept of managing Mobility as a Service (MaaS) is gaining momentum. It's a shift away from 'owning' the means of transport and instead having the possibility to access mobility services on demand. Furthermore, it's necessary to incentivise the use of the different vehicle sharing modes that currently exist (passenger cars, buses or coaches, motorcycle, bicycles, PMVs), placing particular emphasis on the use of shared mobility services to get to workplaces.

Schedule	Actions and indicator	Stakeholders
■ ■	Prepare a technical dossier of recommendations for the safe road circulation of personal mobility vehicles (PMVs) (1.3.01) Preparation of technical documents	SCT, local and supralocal authorities, entities and associations
■ ■ ■	Encourage training activities on the use of PMVs (1.3.02) Number of training activities carried out	SCT, Ministry of Education, local and supralocal authorities, entities and associations
■ ■ ■	Disseminate shared mobility services by means of mobility plans and workplace travel plans (1.3.03) Dissemination actions carried out	Ministry of the Vice-Presidency, Digital Policies and Territory, ATM, local and supralocal authorities

1.4. Urban planning and adaptation of infrastructure to a greener and healthier city model

In order to achieve safer and more sustainable mobility, it's important to consider the design criteria for public places which will enhance it during the stages of urban planning. We have to adapt urban infrastructure to safe and sustainable modes of mobility as we cannot expect these modes to adapt to infrastructure that more often than not does not suit them.

To rectify these deficiencies where necessary, traffic calming measures such as ‘superblocks’, traffic-calmed areas, 30 km/h zones, single-level streets, pedestrian right of way and pedestrian zones must be extended. One of the courses of action in this aspect should be reducing speed limits in urban areas and adapting urban spaces to the new regulations laid down in this regard.

In order to integrate road safety into municipal planning, the SCT collaborates with city councils to draw up local road safety plans. Based on an analysis of accident rates in the municipality and high-risk settings, these set out a number of actions aimed at improving urban road safety in matters such as the use of traffic and road signs, parking requirements, road layouts, speed reduction, pedestrian accessibility, etc.

Additionally, the SCT also offers municipalities other support actions that are more specific such as technical papers on traffic calming measures with the aim of protecting the most vulnerable road user groups.

One of the main problems involving lack of safety and high accident rates lies in the through roads of town centres, where the roads have the features of urban roads as they pass through the centre of the municipality. In many cases, these stretches of road are owned by supra-municipal entities, and as a result, joint action by the owner of the road, the SCT and the municipality is required to help in preventing road traffic accidents and to ‘calm’ these environments down.

Schedule	Actions and indicator	Stakeholders
■ ■ ■	Increase space for pedestrians and reduce public space for motor vehicles in urban areas (1.4.01) Measures implemented	City councils and provincial councils
■ ■ ■	Collaborate with city councils in the extension of pedestrian zones and 30 km/h zones in town centres by carrying out technical traffic calming works (1.4.02) Number of technical papers on traffic calming measures drafted Trend in the number of fatalities and seriously injured casualties in non-motorised transport in urban areas	SCT, city councils and provincial councils
■ ■ ■	Promote healthy routes nearby to encourage active mobility (1.4.03) Promotional actions carried out	City councils and provincial councils
■ ■ ■	Reduce parking for motor vehicles in city centres (1.4.04) Actions carried out	City councils and provincial councils
■ ■ ■	Promote motorcycle and moped parking on the road and do away with pavement parking for them (1.4.05) Actions carried out	City councils and provincial councils
■ ■ ■	Introduce traffic light regulations favourable to public transport and mobility on bicycles and on foot to the detriment of private vehicles (1.4.06) Number of interventions carried out	City councils and provincial councils
■ ■ ■	Adapt the routes used by heavy vehicles in transit through urban areas and through roads (1.4.07) Number of adaptations carried out	SCT, city councils and provincial councils
■ ■ ■	Carry out technical studies to improve road safety on through roads (1.4.08)	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, provincial

Schedule	Actions and indicator	Stakeholders
	Number of technical studies carried out	councils and city councils
■ ■ ■	<p>Address the problems arising from through roads by means of coordinated management between the owner of the road, the municipalities involved and the relevant traffic authority, particularly with regard to the implementation of traffic calming measures to protect vulnerable road users (1.4.09)</p> <p>Number of problems addressed</p>	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, provincial councils and city councils



FOCUS AREA 2

Adapt road safety policies to the new characteristics of accident rates

The number of fatalities and seriously injured casualties in 2020 was significantly reduced compared with the previous year and in relation to 2010, based on the data analysed above. However, it should be taken into account, as mentioned in the sections above, that 2020 was an atypical year in terms of mobility and accident rates.

This is why it's important to continue making every effort to reduce accident rates despite such data. Road safety policies must be adapted to the new reality and this increasingly requires a manifold and multidisciplinary approach. This new stage must focus even more on human failures, which are ultimately responsible for more than 90% of accidents.

This focus area is centred on combating accidents and the plateauing of the decrease in accident rates in the context of increasing mobility and population growth. It also seeks to increase the resources allocated to the prevention and control of risky behaviours, bringing them up to the level of the most advanced European countries, and to ensure safe mobility for all types of road users, particularly the most vulnerable ones.

Thus, protecting the most vulnerable road user groups and the need to increase knowledge on the concurrent factors for accident rates are the keys in this area. Largely speaking, these are the motorcyclists and the elderly, as accident rates for them have not been decreasing as in other groups but instead increasing, particularly in the case of motorcyclists.

This second focus area can be further divided into five subareas, which include the actions contained in this Plan:

- Strategies to combat the **dispersion of accidents** and the plateauing of the decrease in accident rates
- Prevention of **pedestrians** knock-downs
- **Pedal cyclists**: the challenge of promoting bicycle use without leading to an increase in accident rates
- **Motorcyclists**: how can we improve their safety?
- Effects of **population ageing** on mobility and road safety

2.1. Strategies to combat the dispersion of accidents and the plateauing of the decrease in accident rates

Driving under the influence of drink or drugs and speeding, as well as using mobile phones while driving as an ever-increasing factor, are some of the concurrent factors that cause the most number of accidents. This is why it's necessary to increase and reinforce prevention and control measures for these risk factors.

The improvement in the penalty procedure should increase the effectiveness of controlling risky behaviours, as well as prevent and rectify these behaviours by road users. Analogous to this, it's necessary to analyse road traffic accidents in order to identify the types and causes in order to set out the appropriate corrective measures. To this end, progress must be made in improving the collection of information on accidents with casualties, as well as in the improvement of accident databases.

In order to meet the aforementioned targets, applying new technologies to improve preventive road safety controls is an area that's worth looking into. An example of this would be the implementation of new intelligent video surveillance systems such as drones.

Furthermore, it's important to highlight the actions aimed at delving into specific problems that give rise to higher accident rates or that must be studied in greater detail, such as accident rates due to head-on collisions, accidents caused by animals on the road or studying average speeds on Catalan roads. In this regard, the coordination and collaboration mechanisms among all traffic police in Catalonia must come into play: the Mossos d'Esquadra, local police forces and guards. The SCT provides support measures to local police forces in their functions to prevent and control risk factors in driving, such as signing agreements that materialise in the form of assigning LIDAR speed guns, breathalysers, drug kits and other materials necessary to carry out drug and speed controls.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	Analyse and improve traffic accident and mobility databases in order to make them compatible with other systems and obtain more complete information (2.1.01) Databases analysed and improvements made	SCT, DGP, IMELEC, Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities and Applus+ IDIADA
■ ■ ■	Strengthen coordination with the traffic police to improve accident information systems (2.1.02) Trend in the information on urban road traffic accidents	SCT, DGP, local police forces, SEM, road network owners, provincial councils and city councils
■ ■ ■	Share information on mobility and traffic among all stakeholders (2.1.03) Actions carried out	SCT, DGP, Ministry of Health, SEM, Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities, road concessionaires, road victims' associations and other associations and entities
■ ■ ■	Expand the risk exposure information system of the Catalan road network (2.1.04) Maintenance of the risk exposure information system of the road network	SCT
■	Implement the necessary methods to obtain the GPS coordinates of the accidents attended by the Catalan polices forces (2.1.05) % of accidents geo-localised	SCT
■ ■	Include the three-digit code to assign the accident type to each case to get a more accurate analysis of the causes of accidents (2.1.06) Tasks performed	SCT
■ ■ ■	Execute the procedure for the systematic analysis of serious and fatal accidents on the road network (2.1.07) Number of serious and fatal accidents	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, provincial councils, road concessionaires and

Schedule	Actions and indicators	Stakeholders
		Applus+ IDIADA
■ ■	Create the database of reconstructed accidents (2.1.08) Tasks performed	SCT, DGP, city councils and Applus+ IDIADA
■ ■ ■	Include PMVs in the accident databases (2.1.09) Actions carried out	SCT, DGP and local police forces
■ ■ ■	Include a gender perspective in the study of accidents and risky behaviours while driving (2.1.10) Number of publications with a gender perspective	Catalan Women's Institute, SCT, DGP, city councils and road network owners
■ ■ ■	Calculate the average social cost of fatal and serious accidents occurring on the Catalan road network (2.1.11) Calculation of the social cost done	Ministry of the Vice-Presidency, Digital Policies and Territory and SCT
■ ■ ■	Create a comprehensive plan against speeding that will provide for the management of these risky behaviours (2.1.12) Actions implemented to carry out the Plan	SCT, DGP and city councils
■ ■ ■	Expand average speed control over a section of road (2.1.13) Number of existing speed cameras and the trend	SCT, DGP, local police forces and road network owners
■ ■ ■	Study average speeds across the whole of Catalonia to improve the analysis of accident rates (2.1.14) Average speeds in Catalonia	SCT, local and supralocal authorities and Applus+ IDIADA
■ ■ ■	Review the speed limits allowed on the road network in order to adapt them to the features of the roads and to improve road safety (2.1.15) Trend in average speed	Ministry of the Vice-Presidency, Digital Policies and Territory, SCT, local and supralocal authorities and other road network owners
■ ■ ■	Follow up the different studies identifying sections and routes with a large number of accidents with casualties (2.1.16) Trend in accident rates in the sections and routes with a large number of casualties analysed	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory and road network owners
■ ■ ■	Study accident rates due to head-on collisions (2.1.17) Trend in the number of accidents due to head-on collisions	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, road network owners and Applus+ IDIADA
■ ■ ■	Study specific accident rates due to the appearance of animals on the road (2.1.18) Trend in accident rates	SCT, DGP, Ministry of the Vice-Presidency, Digital Policies and Territory, Ministry of Climate Action, Food and Rural Agenda, road network owners and Applus+ IDIADA
■ ■ ■	Study accident rates with casualties on Catalonia's roads (2.1.19) Trend in accident rates	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory and road network owners
■ ■ ■	Combat road traffic offences (2.1.20) Trend in the number of offences	SCT, DGP and local police forces
■ ■ ■	Carry out speed enforcement campaigns (2.1.21) Number of complaints due to driving at inadequate or excessive speeds during campaigns	SCT, DGP, local police forces and provincial councils

Schedule	Actions and indicators	Stakeholders
■	Study the possibility of modifying the legal alcohol limit to move towards a 0.0 g/l limit (2.1.22) Trend in the % of drivers that tested positive	SCT and the Ministry of Health
■	Perform random testing for alcohol, other drugs and psychoactive drugs (2.1.23) Number of controls carried out	DGP and local police forces
■ ■ ■	Carry out surveillance and control campaigns on the use of alcohol and other drugs (2.1.24) Trend in the % of fatalities that tested positive for alcohol or drugs	SCT, DGP and local police forces
■ ■ ■	Carry out campaigns to raise awareness among the population about the effects of certain psychoactive drugs on driving (2.1.25) Trend in the % of those that tested positive for psychoactive drugs	SCT, Ministry of Health, DGP, local police forces and road victims' associations
■ ■	Conduct clinical research projects on the effects of accidents (2.1.26) Number of projects conducted	IMELEC and SEM
■ ■ ■	Increase prevention and control actions for the use of mobile phones while driving and distractions (2.1.27) Trend in the number of accidents where distractions were a concurrent factor	SCT, DGP and local police forces
■ ■ ■	Carry out inspection campaigns on the transport of goods and passengers related to driving hours, rest periods and the maximum permissible weight of the vehicle (2.1.28) Number of controls carried out and level of offenders	Ministry of the Vice-Presidency, Digital Policies and Territory, SCT, DGP and local police forces
■	Create a working group for coordination with the traffic police (2.1.29) Creation of the working group	SCT, DGP and local police forces
■ ■ ■	Implement new intelligent video surveillance systems to improve traffic management and information and control of driving offences (2.1.30) Number of systems implemented	SCT, DGP and local police forces
■ ■ ■	Apply new technologies to improve preventive road safety controls (2.1.31) Trend in the number of driving offences Actions applied	SCT, DGP, Ministry of the Vice-Presidency, Digital Policies and Territory and local police forces
■ ■ ■	Continuously improve the penalty procedure (2.1.32) Improvement actions carried out	SCT, Ministry of Home Affairs, Ministry of Justice and local police forces
■ ■	Review the penalties for certain risky behaviours and propose modifications (2.1.33) Actions carried out	SCT, Ministry of Home Affairs, Ministry of Justice and local police forces

2.2. Prevention of pedestrians knock-downs

Pedestrians are the most vulnerable road users in mobility and, therefore, one of the top-priority policies in road safety should be their protection. This protection includes rethinking public spaces by putting them at the centre of public urban planning policies, among others. Traffic calming measures, such as increasing 30 km/h roads, 'superblocks', pedestrian zones or single-level streets with pedestrian right of way are just some such examples, which have already been tackled in the preceding focus area.

It involves recovering space for pedestrians to the detriment of spaces traditionally intended for private vehicles. This is because having traffic-calmed

urban spaces, aside from increasing the safety of people on foot, contributes towards improving quality of life and health, as well as lowering the high pollution levels currently found in cities. In addition to reducing speed limits in urban areas and through roads as they pass through the municipality, it's important to continue working on the layouts of pedestrian crossings and ensure they have the right placement, traffic light regulations and traffic and road signs.

Additionally, the introduction of new driving technologies applied for the improvement of pedestrian safety, such as vehicle detection systems or innovation in signals at pedestrian crossings – among which intelligent traffic lights stand out – also helps to increase the safety of this road user group on public roads.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	<p>Introduce measures to reduce speed limits in urban environments, through roads and peri-urban areas (2.2.01)</p> <p>Trend in the number of fatalities and seriously injured casualties in urban areas and through roads</p>	SCT, city councils and provincial councils
■ ■ ■	<p>Review the layouts of pedestrian crossings in order to improve their safety conditions (2.2.02)</p> <p>Review actions carried out</p>	City councils and provincial councils
■ ■ ■	<p>Tailor specific traffic and road signs aimed at pedestrians (2.2.03)</p> <p>Number of adaptations carried out</p>	City councils and provincial councils
■ ■ ■	<p>Increase prevention and control campaigns for risky behaviours to protect pedestrians (2.2.04)</p> <p>Number of campaigns carried out</p>	SCT, DGP, local police forces and road victims' associations
■ ■ ■	<p>Include video surveillance systems (ITS) on roads to protect pedestrians, particularly in municipalities that do not have a local police force (2.2.05)</p> <p>Number of actions carried out</p>	SCT, DGP, provincial councils and city councils
■ ■ ■	<p>Set out safe routes for pedestrians on interurban journeys (2.2.06)</p> <p>Number of routes created</p>	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, provincial councils and other road network owners

2.3. Pedal cyclists: the challenge of promoting bicycle use without leading to an increase in accident rates

The Generalitat of Catalonia has approved the Catalan Bicycle Strategy 2020–2025, which sets an overall target of doubling the modal share for cycling to 8% for commuting within cities, in accordance with the Sustainable Development Goals, without increasing pedal cyclist accident rates.

Thus, in order to continue promoting cycling, it's necessary to create cyclable infrastructure that ensures a continuous network, both at the municipal level, with the creation of a basic bike-friendly network with connections to the city's main facilities and public transport, and at the interurban level, with the creation of a connected interurban network linking different towns. In this regard, actions such as updating the *Manual per al disseny de vies ciclistes de Catalunya* ('Manual for the Design of Cycling Routes in Catalonia') seek to modernise technical standards for the design of the urban network of cycling

routes and the network of interconnected green routes throughout Catalonia, in order to increase the safety and mobility of pedestrians and pedal cyclists.

It's also important to carry out campaigns to promote cycling and to encourage communication, educational and training activities.

As regards accident rates, having data and studies on the mobility and accident rates of pedal cyclists – with actions such as preparing the plan for the flow capacity of pedal cyclists – is essential in order to work towards reducing them.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	Take part in the Cycling Board and the Technical Commission (2.3.01) Resolutions adopted Number of meetings held	Ministry of the Vice-Presidency, Digital Policies and Territory, SCT, local and supralocal authorities, entities and associations in the sector
■ ■ ■	Collaborate in boosting bicycle use through national and international functions and events (2.3.02) Number of functions held	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, Ministry of Business and Employment, local and supralocal authorities, entities and associations in the sector
■ ■ ■	Provide technical support to municipalities for the design and implementation of cycling infrastructure and for the promotion of safe cycling (2.3.03) Support actions carried out	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, city councils, provincial councils, entities and associations in the sector
■ ■ ■	Lend continuity to the networks of cycling routes in urban environments and improve the safety of cycling lanes (2.3.04) Interventions carried out	City councils and provincial councils
■	Update the <i>Manual per al disseny de vies ciclistes de Catalunya</i> ('Manual on the Design of Cycling Routes in Catalonia') and include recommendation for the urban road network (2.3.05) Update of the <i>Manual</i>	Ministry of the Vice-Presidency, Digital Policies and Territory, SCT and road network owners
■ ■ ■	Promote pedal cyclist visibility (2.3.06) Trend in the number of pedal cyclist fatalities and seriously injured casualties	SCT, city councils, provincial councils and road network owners
■ ■ ■	Prepare an annual follow-up report to analyse pedal cyclist accident rates and make recommendations for improvement (2.3.07) Preparation of the annual report Trend in road traffic accidents involving pedal cyclists	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities
■ ■ ■	Conduct studies and compile data on vulnerable road users in urban and interurban areas (2.3.08) Number of studies conducted	SCT, DGP, local and supralocal authorities, associations and entities in the sector
■ ■ ■	Analyse and define the action plan for shared roads, monitor it and take part in the working group (2.3.09) Trend in the number of accidents involving bicycles	Ministry of the Vice-Presidency, Digital Policies and Territory, SCT and road network owners
■ ■	Prepare the Plan for the Flow Capacity of Pedal Cyclists on the Road Network, making use of mobile applications (2.3.10) Preparation of the Plan	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities and road network owners
■ ■	Carry out campaigns and actions to promote cycling in daily life aimed at different user groups and professional groups (2.3.11)	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, local and

Schedule	Actions and indicators	Stakeholders
	Number of campaigns carried out	supralocal authorities, entities and associations in the sector

2.4. Motorcyclists: how can we improve their safety?

Motorcyclists are one of the most vulnerable road user groups. In recent years, accidents involving motorcyclists have not gone down but have risen instead. There have been significant increases, which is why every effort must be made to bring this number down.

Thus, considering the vulnerabilities inherent to driving these types of vehicles, first, it's important to adapt road infrastructure that will improve protection for them, particularly in the sections with higher-than-average congestion or that pose greater risk for motorcyclists. This adaptation involves the installation of protection systems, adequate signalling of the roadways with dangerous turns or creating segregated lanes on the access roads to cities, for example, aside from ensuring proper road maintenance conditions.

Second, to contribute towards improving safety for motorcyclists, it's also necessary to promote ongoing training, carrying out refresher training and retraining activities. Additionally, this training must also be extended to other road users by reason of their interaction with two-wheeled vehicle riders. Alongside training, another important aspect to bear in mind is carrying out communication and awareness-raising campaigns aimed at different motorcycle user groups according to the type of mobility they engage in (urban, leisure or weekend, shared mobility, etc.)

With regard to the vehicles themselves, it's necessary to invest in innovation in active and passive safety systems for motorcycles and mopeds.

It's also important to continue carrying out PREMOT controls, which are specifically aimed at motorcycles. These inspect all driver-related aspects (driving licences, alcohol or drug use, etc.) and the technical condition of the vehicle (condition of tires, lighting, number plates, etc.), as well as the use of mandatory protective equipment.

What's more, in light of the high accident rates among this road user group, efforts must be made to reinforce and increase controls for risky behaviours with new control strategies and mechanisms that contribute towards reducing accident rates.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	Continue deploying the Formació 3.0 programme on open roads and spread the word about the training (2.4.01) Number of training actions carried out	SCT, DGP and entities in the sector
■ ■	Design and promote training for motorcyclists who travel for work (2.4.02) Holding the training programme	SCT, Ministry of Business and Employment, entities and associations in the sector
■ ■	Analyse the conditions, experience and requirements needed to drive motorcycles among the different categories (2.4.03) Studies conducted	SCT, entities and associations in the sector

Schedule	Actions and indicators	Stakeholders
■ ■ ■	<p>Analyse motorcyclist accident rates from an infrastructure perspective (2.4.04)</p> <p>Actions carried out</p> <p>Trend in the number of motorcyclist fatalities and seriously injured casualties</p>	SCT, DGP, Ministry of the Vice-Presidency, Digital Policies and Territory, provincial councils and Applus+ IDIADA
■ ■ ■	<p>Make proposals and carry out actions for the improvement of road infrastructure to increase the safety of motorcyclists (2.4.05)</p> <p>Proposals and actions carried out</p> <p>Number of motorcyclist fatalities and seriously injured casualties</p>	SCT, DGP, Ministry of the Vice-Presidency, Digital Policies and Territory, provincial councils, city councils and entities in the sector
■ ■	<p>Adapt road infrastructure to motorcyclists with the implementation of specific horizontal road surface markings and vertical traffic and road signs to improve protection for them, particularly in the sections with higher-than-average congestion or greater risk (2.4.06)</p> <p>Adaptation actions carried out</p> <p>Trend in motorcyclist accident rates for the sections adapted</p>	Ministry of the Vice-Presidency, Digital Policies and Territory, SCT, provincial councils and other road network owners
■ ■ ■	<p>Tailor specific traffic and road signs on the roadways regarding dangerous turns for motorcyclists (2.4.07)</p> <p>Trend in motorcyclist accident rates for the sections with the traffic and road signs</p>	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, provincial councils and other road network owners
■	<p>Study, analyse and promote the segregation of motorcycles on the access roads to major cities (2.4.08)</p> <p>Number of segregated lanes created</p>	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, DGP, city councils, other road network owners and entities
■ ■ ■	<p>Look into the mobility patterns of motorcyclists in order to analyse accident rates and improve motorcycle safety (2.4.09)</p> <p>Studies conducted</p>	SCT
■ ■ ■	<p>Study the compulsory nature of active and passive safety features to improve protection for motorcyclists (2.4.10)</p> <p>Trend in the number of motorcycle and moped fatalities and seriously injured casualties</p>	SCT, DGP and entities in the sector
■ ■ ■	<p>Develop and deploy new forms of enforcement to reduce motorcyclist accidents (2.4.11)</p> <p>Number of specific campaigns carried out</p>	SCT, DGP and local police forces
■ ■ ■	<p>Carry out comprehensive control campaigns on motorcyclists' behaviour and on the condition of motorcycles and mopeds (PREMOT controls) (2.4.12)</p> <p>Trend in the number of motorcyclist fatalities and seriously injured casualties</p>	SCT, DGP, local police forces and road victims' associations

2.5. Effects of population ageing on mobility and road safety

Population ageing and the improvement of living and social conditions for this population group have consequences on mobility and road safety. There's a larger group of active seniors that still drive, but it's also important to bear in mind that they're more vulnerable in case of an accident, whether it's a collision or a pedestrian knock-down.

Let's not forget that pedestrians over 70 are more likely to get seriously injured or killed in pedestrian knock-downs. This is why it's important to carry out training actions aimed at the elderly which are tailored to their mobility characteristics and create an ongoing training system that will help them improve their mobility skills and attitudes.

At the same time, it's important to adapt the driving licence renewal tests according to the physical and cognitive abilities of individuals, supporting the tools for the assessment of cognitive functions related to driving and improving coordination between the traffic and health authorities in the exchange of information.

Another aspect to bear in mind – considering the progressive ageing of the population – is adapting urban spaces while responding to the specific needs of this population group with measures such as protecting the environment of highly frequented facilities or introducing the appropriate traffic light regulations.

Schedule	Actions and indicators	Stakeholders
■ ■	Analyse the tools to assess cognitive functions related to safe driving and provide support (2.5.01) Analysis and support activities carried out	SCT, driving schools and Catalan Psychological Association
■ ■ ■	Make progress in improving communication between traffic and health authorities in order to provide the most appropriate response possible to the needs of different high-risk groups, while respecting the privacy of their personal data (2.5.02) Coordination actions carried out	SCT and the Ministry of Health
■ ■ ■	Improve traffic and road signs in settings with a large number of seniors (2.5.03) Improvements made in the installation of traffic and road signs in environments	City councils and provincial councils
■ ■	Raise the population's awareness about the risks faced by seniors in terms of mobility and promote the updating of knowledge and skills of the people who drive (2.5.04) Awareness-raising actions carried out	SCT, local and supralocal authorities, road victims' associations and other associations and entities



FOCUS AREA 3

Create an awareness-raising and educational strategy to get the whole of society involved

This focus area involves deploying initiatives to promote a culture shift towards a vision of the future with no road traffic casualties by creating synergies – with the involvement of the whole of society – and defining a communicative strategy that revolves around the shared responsibility for the right to mobility.

Effectively reaching the different road users, particularly the most vulnerable ones, calls for a change in communication, with the creation of more cross-cutting messages suited to new channels such as social media.

In terms of mobility and road safety, it's essential to continue with road safety education and training to bring about this culture shift. This is why it's important to take this into primary and secondary schools, including more content on safety and sustainable mobility in the school curriculum in order to give rise to responsible mobility habits and behaviours from childhood and adolescence.

Furthermore, it's absolutely crucial to work even harder on improving ongoing driver training and adapt this training to new mobility challenges in order to enhance their competencies and update their knowledge in relation to new technological breakthroughs and new forms of mobility.

As regards repeating risky behaviours, this problem must be tackled in a comprehensive manner. This includes interventions from both the health and therapeutic areas, in terms of the control and treatment of addictions and risky behaviours, and the legal area in terms of the changes to legislation that may be made.

Lastly, we must continue working on improving occupational road safety and the modal and intermodal changes in commuting to work and encourage their inclusion in occupational hazard prevention plans and workplace travel plans.

This third focus area is further subdivided into six subareas, which include the actions defined:

- **Communication synergies** to have a more effective impact on shared responsibility in mobility
- Training strategy for **children and young people** with the current and future mobility models
- **Lifelong** learning in the face of risks and needs of safe, sustainable and healthy mobility
- **Driver training** adapted to new mobility challenges
- Preventive and control measures for **offending and re-offending behaviours**
- Increase in actions to improve **occupational road safety**

3.1. Communication synergies to have a more effective impact on shared responsibility in mobility

The awareness-raising activities carried out by the SCT and other public and private entities in relation to road traffic accidents and other aspects of road safety are important to call public attention to the path towards safe, healthy and sustainable mobility. These include communication campaigns using conventional media and social media, with an impact on combating risky behaviours that focus not only on the consequences and the danger of adopting such behaviours but also on a positive attitude of shared responsibility.

Moreover, greater efforts must be made to include a gender perspective in these communication actions, such as carrying out promotional campaigns about collaborative driving versus competitive driving.

It's also important to take part in congresses and conferences and collaborate with universities, scientific institutions and research centres, focusing on scientific research and getting involved in European and international projects alongside the latest trends and innovation in road safety.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	Take part in road safety campaigns (3.1.01) Number of campaigns	SCT, Ministry of Home Affairs, local and supralocal authorities, road victims' associations and other associations, foundations and entities
■ ■ ■	Carry out campaigns to promote collaborative driving instead of competitive driving (3.1.02) Number of campaigns carried out	SCT, Catalan Women's Institute and associations
■ ■ ■	Carry out road safety advertising actions on social media (3.1.03) Number of placements on social media Number of views of videos posted Number of Twitter followers among the different SCT accounts Number of tweets marked as 'favourite' or 'retweeted'	SCT, local and supralocal authorities, road network concessionaires, road victims' associations and other associations, foundations and entities
■ ■ ■	Promote the writing of the InfoTrànsit blog (3.1.04) Number of visits to the InfoTrànsit blog	SCT
■ ■ ■	Collaborate with universities, scientific institutions and advanced research centres (3.1.05) Number of collaboration agreements Collaboration actions carried out	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, other ministries of the Generalitat, local and supralocal authorities, universities, research centres and institutes, Applus+ IDIADA, entities and associations
■ ■ ■	Take part in European and international projects and increase the presence of the SCT on the international scene (3.1.06) Number of European projects taken part in	SCT, ministries of the Generalitat, Applus+ IDIADA, road victims' associations, other associations and entities
■ ■ ■	Organise congresses and conferences related to traffic operation and management and road safety and take part in them (3.1.07) Number of functions held	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, other ministries of the Generalitat, IMELEC, local and supralocal authorities, road victims' associations, other associations, foundations and entities

3.2. Training strategy for children and young people with the current and future mobility models

To achieve full training that encourages safe and sustainable mobility, it's best to start during the early stages of education. This is why it's necessary to support education about the future mobility model in schools, integrating the basic skills for safe, sustainable and healthy mobility in a cross-cutting manner.

To ensure the likelihood of this outcome, we must advocate the inclusion of road safety training suited to each year group in the school curriculum, with a review of current content.

Other actions, such as practical sessions on circuits, have been carried out successfully for a few years now, and have been well received by the students taking part in them.

Adapting the guidelines for safe and sustainable mobility to school settings – through school roads and settings – is a course of action that brings about the transformation of the school setting for the benefit of the children's safety and wellbeing. While this Plan is in force during the three-year period, a technical dossier on school settings and access to these settings will be prepared.

Lastly, it's worth highlighting actions such as proposing the drafting of a manifesto advocating active, safe and sustainable school mobility and the appointment of a person of reference in the area of mobility in schools, based on the pilot experiments in the territory.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	<p>Deploy training for safe, sustainable and healthy mobility together with the Ministry of Education (3.2.01)</p> <p>Tasks performed</p>	SCT, Ministry of Education, Ministry of the Vice-Presidency, Digital Policies and Territory, city councils, road safety education officers, ADEVIC and road victims' associations
■ ■ ■	<p>Promote and support educational interventions for safe, sustainable and healthy mobility within the framework of a competency model and provide support (3.2.02)</p> <p>Number of interventions and assessments</p> <p>Number of editions of the materials</p>	SCT, Ministry of Education, road safety education officers, ADEVIC, road victims' associations and entities
■ ■	<p>Update the handling of road safety education and sustainable mobility in schools (3.2.03)</p> <p>Update actions carried out</p>	Ministry of Education and SCT
■ ■ ■	<p>Collaborate with public and private entities that take part in education for safe and sustainable mobility and promote it (3.2.04)</p> <p>Collaboration actions carried out</p>	SCT, Ministry of Education and public and private entities
■ ■ ■	<p>Monitor, assess and propose interventions in schools (road safety circuits, 'Game Over', specific campaigns, etc.) (3.2.05)</p> <p>Number of interventions carried out</p>	SCT, Ministry of Education, DGP, road safety education officers and Institut Guttmann Foundation
■ ■ ■	<p>Teach safe, sustainable and healthy mobility through practical activities in schools and during free time, and study, if necessary, whether to increase the activities including training on new forms of mobility (3.2.06)</p> <p>Trend in the number of young people killed/seriously injured riding bicycles, mopeds and motorcycles</p>	SCT, Ministry of Education, road safety education officers, DGP, city councils, entities and associations

Schedule	Actions and indicators	Stakeholders
	Number of practical activities carried out	
■ ■ ■	Educate for safe and sustainable mobility in schools (3.2.07) Educational activities carried out Training and number of sessions for road safety education officers	SCT, ISPC, DGP, ADEVIC, road safety education officers, city councils and road victims' associations
■ ■	Collaborate in the drafting and subsequent dissemination of a manifesto advocating active, safe and sustainable school mobility (3.2.08) Drafting and dissemination actions for the manifesto	SCT, Ministry of Education, Ministry of the Vice-Presidency, Digital Policies and Territory, Ministry of Climate Action, Food and Rural Agenda, local and supralocal authorities, road victims' associations and other associations and entities
■	Consider the appointment of a person of reference in the area of mobility in schools, based on the pilot experiments in the territory (3.2.09) Number of schools that have a mobility coordinator	SCT, Ministry of Education, Ministry of the Vice-Presidency, Digital Policies and Territory and city councils
■ ■ ■	Promote safe and sustainable school roads (3.2.10) Trend in the number of fatalities due to pedestrian knock-downs involving children in urban areas	SCT, local and supralocal authorities, road victims' associations and other associations and entities
■ ■ ■	Prepare a technical dossier on school settings and access to these settings (3.2.11) Preparation and dissemination of the technical dossier	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, Ministry of Education, city councils and provincial councils
■ ■ ■	Incentivise the use of sustainable means of transport and healthy mobility habits in schools (3.2.12) Incentivisation actions carried out	SCT, Ministry of Education, Ministry of the Vice-Presidency, Digital Policies and Territory, city councils, provincial councils, entities and associations

3.3. Lifelong learning in the face of risks and needs of safe, sustainable and healthy mobility

The emphasis on education for the safe mobility of children and young people should be extended to other age bands and to all kinds of groups. Ongoing training on road safety and sustainable mobility throughout people's lives should be promoted, while bearing in mind the different target groups and the different mobility patterns they exhibit. This can be done through actions such as intergenerational road safety training programmes, awareness-raising actions at authorised drivers' check centres and in the health sector on the effects of medication on driving.

In addition, we shouldn't neglect the impact of new technologies applied to mobility and knowing how to use them during training.

Aside from road safety hazards, it's also very important to emphasise environmental hazards and environmental information campaigns.

With regard to the goods and passenger transport sector, it will be necessary to continue carrying out actions to disseminate information and best practices as well as training actions.

Schedule	Actions and indicators	Stakeholders
■ ■	Promote awareness and information on medication and driving among authorised drivers' check centres and in the health sector (3.3.01) Awareness-raising actions carried out	SCT and the Ministry of Health
■ ■	Carry out intergenerational road safety training programmes (3.3.02) Training programmes carried out	SCT and Ministry of Social Rights
■ ■ ■	Carry out actions to disseminate best practices and information on compliance with regulations aimed at companies, persons concerned and associations representing the goods and passenger transport sector (3.3.03) Number of dissemination actions carried out	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, city councils, employers, trade unions, training centres and associations
■ ■ ■	Carry out training actions on regulations applicable to the transport of goods and passengers aimed at CME staff and local police forces (3.3.04) Number of courses and seminars at the end of the three-year period	SCT, DGP, Ministry of the Vice-Presidency, Digital Policies and Territory and local police forces
■ ■ ■	Promote the actions of the transport and logistics working group (3.3.05) Number of working group sessions held	SCT
■ ■ ■	Launch communication campaigns on risk and environmental factors (3.3.06) Number of campaigns carried out and assessment	SCT, Ministry of Home Affairs, Ministry of Climate Action, Food and Rural Agenda, road victims' associations and other associations and entities
■ ■ ■	Carry out awareness-raising campaigns aimed at drivers so they can protect themselves against natural hazards and in case of risk and crisis situations due to weather phenomena (snowfall, windstorms, floods, etc.) and forest fire risk (3.3.07) Number of campaigns carried out and assessment	SCT, Ministry of Home Affairs, road network owners and road concessionaires

3.4. Driver training adapted to new mobility challenges

It's necessary to implement a comprehensive driver training model for safe and sustainable mobility which is adapted to the new challenges posed by new modes of mobility and change, if necessary, the current training content. Furthermore, to make this possible, it's crucial to encourage the retraining and updating of knowledge by driving instructors through a training plan for the driving school. This involves adding content on new modes of transport, efficient driving and the use of applied new technologies, with gender and cultural perspectives on driving patterns.

For many years now, the SCT and the Ministry of Education have been collaborating and offering materials, projects and information and awareness-raising sessions aimed at teaching staff and driving instructors.

With the aim of incentivising excellence at driving schools and driving licence renewal centres, mechanisms such as the Quality Driving School award will be continued.

As regards driver training, it's important to carry out awareness-raising actions about the risk factors in driving and introduce retraining and updating mechanisms for driving licence renewals. This will then let drivers acquire up-to-date road safety training for the improvement of road safety which is adapted to new mobility challenges.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	<p>Raise awareness about the risks of using alcohol, other drugs and medication, as well as the distractions caused by using mobile phones while driving (3.4.01)</p> <p>Awareness-raising actions carried out % of fatalities with alcohol and other drugs detected</p>	SCT, Ministry of Health, DGP, local police forces, road victims' associations, foundations and Catalan Psychological Association
■ ■ ■	<p>Propose driver training improvements (3.4.02)</p> <p>Improvements proposed</p>	SCT, Federation of Driving Schools of Catalonia, training centres, driving instructors associations of Catalonia, road victims' associations, universities and research teams and other associations and entities
■ ■	<p>Provide resources for the improvement of driver training (3.4.03)</p> <p>Number of actions carried out</p>	SCT, Federation of Driving Schools of Catalonia, training centres, universities, Catalan Psychological Association, road victims' associations and other associations, foundations and entities
■ ■ ■	<p>Assess driving schools and authorised drivers' check centres (3.4.04)</p> <p>Number of visits made on an annual basis</p>	SCT and the Ministry of Health
■ ■ ■	<p>Train professional staff: road safety education trainers and driving school directors (3.4.05)</p> <p>Number of training processes and participants</p>	SCT, Ministry of Education, training centres, Federation of Driving Schools of Catalonia and road victims' associations
■ ■ ■	<p>Include content on personal mobility vehicles as well as other sustainable means of transport in training courses for trainers, as well as content on efficient driving and the use of applied new technologies (3.4.06)</p> <p>Number of courses held</p>	SCT, Ministry of Climate Action, Food and Rural Agenda, training centres and Federation of Driving Schools of Catalonia
■ ■ ■	<p>Include knowledge of the gender and cultural perspectives in the training of driving instructors (3.4.07)</p> <p>Introduction of the gender perspective in the courses</p>	SCT, training centres and Catalan Women's Institute
■ ■ ■	<p>Develop the curriculum for the advanced certificate for safe and sustainable mobility training (3.4.08)</p> <p>Development of the curriculum</p>	SCT, Ministry of Education and entities in the sector

3.5. Preventive and control measures for offending and re-offending behaviours

In light of the behaviour of repeat offenders, it's necessary to address this problem using different approaches. This involves identifying possible addictions and their therapeutic intervention and establishing communication protocols for the risks detected. Evaluating possible risky behaviours when renewing the driving licence could help assess the current risks and make them aware of them.

In any case, aside from imposing fines, it should be compulsory for them to attend driver re-education and road safety awareness courses, which attendees have rated quite positively.

It's also important to carry out awareness-raising campaigns about the consequences of re-offending behaviour, without neglecting the creation of positive reinforcement mechanisms for non-offenders.

Schedule	Actions and indicators	Stakeholders
■	<p>Analyse the cases where there are deficiencies in psychophysical aptitude detected in drivers holding a valid driving licence (3.5.01)</p> <p>Number of cases analysed</p>	SCT and the Ministry of Health
■ ■ ■	<p>Develop driver awareness and re-education courses and assess the procedures and outcomes (3.5.02)</p> <p>Number of participants Number of monitoring actions/studies</p>	SCT, training centres, Federation of Driving Schools of Catalonia, Catalan Psychological Association and road victims' associations
■ ■ ■	<p>Train professional staff and observers who take part in driver re-education and road safety awareness courses related to the points-based licence system (3.5.03)</p> <p>Number of participants in the courses and seminars</p>	SCT, road victims' associations and other entities
■ ■	<p>Study the possibility of having to attend training courses instead of paying fines for certain types of driving offences (3.5.04)</p> <p>Proposals made</p>	SCT, Ministry of Justice, city councils and road victims' associations
■ ■	<p>Propose the application of measures for repeat and multiple offenders (3.5.05)</p> <p>Measures proposed</p>	SCT, Ministry of Justice, Ministry of Health, universities and research teams and Catalan Psychological Association
■ ■ ■	<p>Analyse the impact of the points-based licence system on the offences committed by drivers (3.5.06)</p> <p>Studies conducted</p>	SCT and Federation of Driving Schools of Catalonia

3.6. Increase actions to improve occupational road safety

Alongside management measures for work-related mobility and commuting for work, preventive actions are needed in the workplace to reduce work-related road traffic accidents.

The first step is to better understand the specific circumstances of work-related road traffic accidents by analysing their accident rates in order to adopt measures to prevent them.

In the current context, it's necessary to study the effects of COVID-19 on mobility patterns among the population with the subsequent implementation of remote working and study its effects on work-related mobility and accident rates.

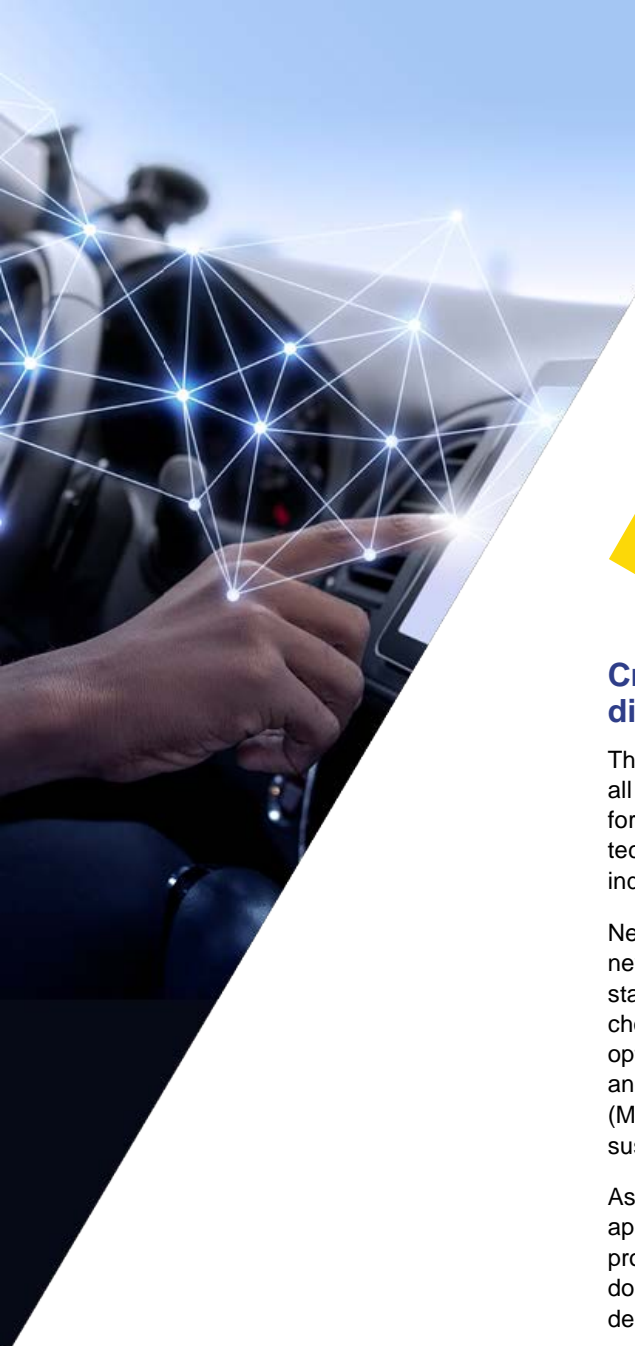
Moreover, it's important to include occupational road safety in occupational hazard prevention and mobility plans and to continue developing workplace travel plans. These seek to optimise mobility among the people working at the company or those that interact with it, supporting the use of alternative modes of transport to private vehicles and rationalising car use.

In terms of training, implementing training courses on safe attitudes and behaviours suited to employment needs – particularly for transport companies – is crucial. This is to promote road safety training and efficient driving in companies, without neglecting the importance of raising awareness on the use of more sustainable and healthy modes of transport, such as promoting vehicle sharing in ordinary commuting.

Work-related training is also a key pillar in the area of the government, as embodied by the holding of courses on road safety at work aimed at its employees as well as the provision of educational resources for companies and their staff.

Schedule	Actions and indicators	Stakeholders
■ ■	<p>Set out procedures for the exchange of information on work-related road traffic accidents (3.6.01)</p> <p>Data collection procedures carried out</p>	SCT, DGP, Ministry of Business and Employment (ICSSL) and local police forces
■ ■	<p>Prepare a study on work-related road traffic accidents based on the exchange of information on road traffic accidents and accidents at work (Phase 2) (3.6.02)</p> <p>Preparation of the study</p>	SCT and Ministry of Business and Employment (ICSSL)
■ ■ ■	<p>Analyse the changes in mobility with the implementation of remote working (3.6.03)</p> <p>Analyses performed using mobility data from remote working that is independent of other variables (such as variables arising from COVID-19)</p>	SCT and Ministry of Business and Employment (ICSSL)
■ ■ ■	<p>Promote vehicle fleet renewal at companies in order to have a most sustainable fleet that pollutes less (3.6.04)</p> <p>Actions carried out to promote vehicle fleet renewal</p>	Ministry of Climate Action, Food and Rural Agenda (ICAEN), local and supralocal authorities and companies
■ ■ ■	<p>Promote vehicle sharing and collective transport in commuting to work (3.6.05)</p> <p>Number of work-related road traffic accidents</p> <p>Promotional actions carried out</p>	SCT, local and supralocal authorities, transport service operators and entities

Schedule	Actions and indicators	Stakeholders
■ ■ ■	<p>Make proposals to include occupational road safety in occupational hazard prevention plans and provide companies with support to draft them (3.6.06)</p> <p>Proposals made Trend in work-related road traffic accident rates</p>	SCT, Ministry of Business and Employment (ICSSL), Ministry of Business and Employment, Ministry of the Vice-Presidency, Digital Policies and Territory, trade unions and employers
■ ■ ■	<p>Train technical staff for occupational hazard prevention in terms of road safety (3.6.07)</p> <p>Training actions carried out</p>	SCT, Ministry of Business and Employment (ICSSL) and Ministry of the Presidency
■ ■ ■	<p>Promote and provide educational resources for information and training in occupational road safety aimed at employees and companies (3.6.08)</p> <p>Number of resources and publications</p>	SCT, Ministry of Business and Employment (ICSSL), entities and associations
■ ■ ■	<p>Prepare informative/training materials on occupational road safety for employees and companies. Preparation of guides. (3.6.09)</p> <p>Publication of guides on occupational road safety Trend in work-related road traffic accident rates</p>	SCT, Ministry of Business and Employment (ICSSL), entities and associations
■ ■ ■	<p>Design and hold online courses on road safety at work aimed at employees (3.6.10)</p> <p>Trend in work-related road traffic accident rates Number of courses held and assessment</p>	SCT and Ministry of Business and Employment (ICSSL)
■ ■ ■	<p>Hold in-person courses on road safety at work aimed at employees (3.6.11)</p> <p>Number of courses held and assessment</p>	SCT, Ministry of Business and Employment (ICSSL), companies and road victims' associations
■ ■ ■	<p>Hold in-person and online courses on road safety at work aimed at government employees (3.6.12)</p> <p>Number of courses held and assessment</p>	SCT, DGP, Ministry of the Presidency (Public Administration School), Ministry of Climate Action, Food and Rural Agenda and other ministries of the Generalitat
■	<p>Hold the seminar 'How to organize safe work-related travel in different territories' (3.6.13)</p> <p>Holding of the seminar</p>	Ministry of Business and Employment (ICSSL) and SCT
■ ■	<p>Carry out information and awareness-raising campaigns on the risks of ordinary commuting (3.6.14)</p> <p>Number of campaigns carried out</p>	SCT, Ministry of Business and Employment, local and supralocal authorities
■	<p>Update information on the Ministry of Business and Employment website specifically devoted to occupational road safety (3.6.15)</p> <p>Continuity in maintenance work for the updated website</p>	Ministry of Business and Employment (ICSSL)
■ ■ ■	<p>Collaborate with city councils in the drafting of technical papers to improve road safety on industrial estates (3.6.16)</p> <p>Number of technical papers drafted</p>	SCT and city councils



FOCUS AREA 4

Create a forum for strategic cooperation among the different sectors involved in intelligent mobility

This focus area is centred on public and private strategic coordination to boost all sectors involved in mobility in favour of intelligent systems, creating a space for dialogue in the field of mobility in terms of energy efficiency and technological progress and deepening collaboration between government, industry and society.

New traffic management systems based on intelligent transport systems and new management and information technologies make it possible to learn the status of traffic in real time and offer relevant information to users so they can choose the most efficient or sustainable option among the different mobility options available. Thus, with the emergence of new private operators in traffic and mobility management systems, the so-called **Mobility as a Service** (MaaS) is an opportunity on the path towards greater efficiency and sustainability in mobility patterns.

As regards automated mobility, the development of 5G technology and the application of the Internet of Things will contribute to its development by providing real-time information on road conditions and what other vehicles are doing. In this regard, the growing automation of vehicles will allow for better decision-making, which will lead to improved road safety.

This is why this focus area is subdivided into four subareas containing the actions in this Plan:

- Improvement of **energy efficiency** in motor vehicles: **the electrification** of mobility
- **Mobility as a Service (MaaS). Intelligent transport systems and new technologies for the improvement of traffic management and information.** Opportunities for new private operators in traffic management systems
- **Challenges of autonomous and connected mobility**
- Management of the transition period until fully **automated** mobility is achieved

4.1. Improvement of energy efficiency in motor vehicles. The electrification of mobility

The use of electric vehicles offers many advantages in terms of the emission of pollutant gases and the improvement of environmental quality in town centres.

One of the key points for the development of electric vehicles is the expansion of charging points. This is why it will be necessary to create a network of infrastructure throughout the entire territory with charging points and charging stations.

Aside from electric vehicles, we should also encourage the diversification of sustainable energy sources, promote the use of vehicles that are powered by clean, renewable energy and support research into new technologies aimed at reducing the environmental impact of mobility. At the same time, multimodality and the reduction of unnecessary or superfluous travel must be promoted and a more rational use of vehicles must be encouraged.

This focus area, which is centred on vehicles, also encompasses the installation of active and passive safety features in standard vehicles to improve efficiency and safety.

The vehicle inspection (ITV) system will also benefit from this improvement in energy efficiency. The development of solutions to measure nitrogen oxides and microparticles at centres and emissions control through the use of OBD systems make it possible to achieve cleaner mobility.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	Develop new satellite navigation technologies and applications (4.1.01) Number of projects taken part in	SCT, Ministry of Business and Employment, Ministry of the Vice-Presidency, Digital Policies and Territory, Applus+ IDIADA and entities
■ ■	Create a working group to design the transition towards electric mobility (4.1.02) Creation of the working group and number of meetings held	SCT, Ministry of Climate Action, Food and Rural Agenda (ICAEN), Ministry of the Vice-Presidency, Digital Policies and Territory, Applus+ IDIADA and entities
■ ■ ■	Create a network of electric vehicle charging infrastructure with the expansion of charging points and charging stations across the entire territory (4.1.03) Trend in the expansion of charging points	Ministry of Climate Action, Food and Rural Agenda (ICAEN) and road network owners
■ ■ ■	Promote the installation of active and passive safety devices in standard vehicles (4.1.04) Trend in the use of safety devices among people involved in accidents	SCT, active and passive safety feature manufacturers, Applus+ IDIADA and entities
■ ■ ■	Support multimodality, particularly the most energy-efficient modes (4.1.05) Support actions carried out	SCT, Ministry of Climate Action, Food and Rural Agenda (ICAEN), ATM and local and supralocal authorities
■ ■ ■	Reduce the number of vehicles skipping vehicle inspections to the extent possible by launching new campaigns with authorised centres (4.1.06) % of vehicles with a vehicle inspection certificate % of commercial vehicles with a vehicle inspection certificate	SCT, Ministry of Business and Employment, DGP and local police forces
■ ■ ■	Monitor and keep track of compliance with the obligation to pass the vehicle inspection regularly (4.1.07) % of vehicles with a vehicle inspection certificate % of commercial vehicles with a vehicle inspection certificate	SCT, Ministry of Business and Employment, DGP and local police forces
■ ■ ■	Control vehicle emissions through the use of OBD systems during the vehicle inspection (4.1.08) % of vehicles with emissions control through OBD systems	Ministry of Business and Employment and Ministry of Climate Action, Food and Rural Agenda
■ ■ ■	Develop solutions to measure nitrogen oxides and microparticles at vehicle inspection centres (4.1.09) Solutions developed	Ministry of Business and Employment and Ministry of Climate Action, Food and Rural Agenda

Schedule	Actions and indicators	Stakeholders
■ ■ ■	<p>Raise awareness about improving vehicle occupancy in order to reduce the number of vehicles in cities and unnecessary travel with the subsequent effects on traffic congestion (4.1.10)</p> <p>Awareness-raising actions carried out</p>	SCT, ATM, local and supralocal authorities

4.2. Mobility as a Service (MaaS). Intelligent transport systems and new technologies for the improvement of traffic management and information. Opportunities for new private operators in traffic management systems

One of the new challenges to be faced in the coming years is the introduction of new technologies in the field of mobility and how to manage their integration into the current model. Promoting integrated mobility services is key to understanding mobility in Catalonia as a global system, providing the most appropriate information in each case and for each user, with the shared goal of achieving more sustainable, healthy and safe mobility among everyone.

If the new emerging forms of mobility are to play a key role in the future, as well as in the development of new technologies that will allow faster delivery of all available information in real time, the role of the public authorities is key to provide access to this mobility data in an open system.

The ITS (Intelligent Transport Systems) Plan 2021–2023 prepared by the SCT is part of this firm commitment to the continuous introduction and renewal of innovation-based technological instruments and equipment in order to make the most of the impact of new technologies in favour of road safety and real-time mobility management, mobility as a service and autonomous vehicles.

Specifically, the ITS Plan 2021–2023 has the following strategic objectives:

- Information management by maintaining, ensuring and offering information services in real time
- Intermodal management through the development of efficient traffic management systems and tools favouring the connection of different systems and promoting safe and sustainable transport
- Deployment of C-ITS (Cooperative Intelligent Transport Systems) systems adapted to the new mobility paradigm characterised by the emergence of connected and autonomous vehicles and mobility as a service

The actions contained in the aforementioned ITS Plan are attached as an annex to this Road Safety Plan 2021–2023, which is why there's no need to go into detail here.

Lastly, it's necessary to highlight the importance of vehicles that come with driver-assistance systems (ADAS) – particularly heavy vehicles – to improve road safety for vulnerable road user groups such as motorcyclists, pedal cyclists and pedestrians.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	Promote the adaptation of mobility service operators to autonomous and connected mobility (4.2.01) Actions carried out	SCT, Ministry of Business and Employment, Ministry of the Vice-Presidency, Digital Policies and Territory, mobility service providers and road concessionaires
■ ■ ■	Launch integrated mobility service platforms (4.2.02) Actions carried out	SCT, Ministry of Business and Employment and mobility service providers
■ ■	Update the Catalan Traffic Service app (4.2.03) Number of improvements introduced Number of visits to the application	SCT
■ ■ ■	Guarantee and provide citizens with real-time information based on ITS systems (4.2.04) Number of enquiries made	SCT
■ ■ ■	Implement the actions set out in the ITS Plan 21–23 (4.2.05) Degree of implementation of the actions	SCT
■ ■ ■	Deploy the SCT's aircraft assets, whether fixed wing or rotary wing (4.2.06) Number of aircraft assets deployed	SCT
■ ■ ■	Implement special road traffic, planning and regulation measures to improve road safety and increase flow capacity (4.2.07) Number of new km of roads with special measures	SCT and DGP
■ ■ ■	Disseminate the network of mandatory routes for safety reasons for vehicles transporting dangerous or hazardous goods (4.2.08) Number of enquiries made by drivers	SCT
■ ■ ■	Create and disseminate a network of suitable routes for road safety reasons for vehicles under the special transport access regime or in the form of the European Modular System (4.2.09) Actions for the creation of the network of routes and its dissemination	SCT
■ ■ ■	Promote advanced driver-assistance systems (ADAS) and the development of new technologies applied to driving to improve safety for pedestrians (4.2.10) Promotional actions carried out	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, automotive sector and Applus+ IDIADA

4.3. Challenges of autonomous and connected mobility

There are no actions listed under this subarea for the three years that this Plan will be valid.

4.4. Management of the transition period until fully automated mobility is achieved

The shift towards the automation of mobility and the development of autonomous vehicles is a gradual process. It's currently in the early stages of development, and it will have to ensure a safe coexistence between the current systems and the implementation of the new systems arising from automated mobility in the future.

To safely achieve these objectives, it's necessary to use spaces to conduct pilot tests to test autonomous and connected vehicles, such as the Catalonia Living Lab project. Alongside this, bearing in mind that people should continue to be at the heart of mobility, the psychosocial acceptance of the social change embodied by the automation of mobility should be the next thing to do on the list.

In summary, it's important to remember that to manage the transition period until fully automated mobility is achieved, a change in mindset on a social scale will be necessary to integrate automated and connected mobility in current society. This is so it won't pose a road safety or social exclusion issue.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	Support the addition of autonomous and connected vehicles: Catalonia Living Lab (4.4.01) Number of tests conducted	SCT, Ministry of Business and Employment, automotive sector and Applus+ IDIADA
■ ■	Create a working group to design the transition towards autonomous and connected mobility (4.4.02) Creation of the working group	SCT, ministries of the Generalitat, local and supralocal authorities, road network owners, automotive sector and Applus+ IDIADA
■ ■	Manage and adopt measures to avoid the risk of exclusion of the elderly or people with problems accessing technologies related to autonomous and connected vehicles (4.4.03) Actions carried out	SCT, Federation of Driving Schools of Catalonia, Applus+ IDIADA, associations and entities



**FOCUS
AREA 5**

Set strategic objectives for infrastructure with regard to new mobility systems

This focus area seeks to respond to the new challenges that intelligent transport systems can pose to infrastructure. To meet the new needs of automated and connected driving, it will be necessary to adapt the roads with the necessary equipment that will let the infrastructure connect with vehicles.

Another aim is to create an accessible and compatible network for everyone, taking into account the right to safe mobility of vulnerable road user groups through the layout of spaces for these groups. The road network will also be optimised and homogenised using next-generation intelligent transport systems.

In this focus area, there are two subareas under which the actions in this Plan fall under:

- The challenge of **adapting the road network** to intelligent transport systems and autonomous and connected mobility
- **Safe design of infrastructure**, with specific spaces devoted to vulnerable road user groups

5.1. The challenge of adapting the road network to intelligent transport systems and autonomous and connected mobility

Future automated and connected mobility will offer a number of advantages, but also important challenges such as the adaptation of infrastructure. Thus, the challenge is to define and deploy a digital infrastructure model that will enable mobility of the future and intelligent transport in order to identify and develop the infrastructure for the digital transformation of mobility and define its connectivity and sensorisation model.

The ITS Plan 2021–2023 contemplates actions for the development of sensorisation in the transport networks to obtain data in real time to improve management. This will then make it possible to avoid collisions, road traffic accidents or traffic congestion, among others.

Analogous to this, it's necessary to redefine the infrastructure maintenance model and set up basic equipment to make it suitable for autonomous mobility, standardise road conditions (pavements, drainage systems, intelligent materials, etc.) and seek out the application of new advanced and sustainable materials.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	Promote the adaptation of infrastructure to autonomous and connected	Ministry of the Vice-Presidency, Digital

Schedule	Actions and indicators	Stakeholders
	mobility (5.1.01) Actions carried out	Policies and Territory, local and supralocal authorities, road network owners, road concessionaires and Applus+ IDIADA
■ ■ ■	Set up controlled and segregated environments for autonomous driving (5.1.02) Actions launched (project or implementation)	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, Ministry of Business and Employment, road network owners, road concessionaires and Applus+ IDIADA
■ ■ ■	Promote the research and application of new sustainable materials for infrastructure (5.1.03) Actions carried out	Ministry of the Vice-Presidency, Digital Policies and Territory, universities and entities
■ ■ ■	Approve and implement the Maintenance Plan for ITS equipment in the Catalan road network (5.1.04) Number of actions carried out	SCT
■ ■ ■	Implement the programmes included in the strategic focus area of operating the Generalitat's road network (5.1.05) Number of actions carried out	Ministry of the Vice-Presidency, Digital Policies and Territory
■ ■ ■	Implement the programmes included in the strategic focus area of a Vision Zero approach to road safety in the Generalitat's road network (5.1.06) Number of actions carried out	Ministry of the Vice-Presidency, Digital Policies and Territory
■ ■ ■	Assess the Generalitat's road network using the EuroRAP Star Rating methodology (5.1.07) Km of roads assessed	SCT and Ministry of the Vice-Presidency, Digital Policies and Territory

5.2. Safe design of infrastructure, with specific spaces devoted to vulnerable road user groups

The safe design of infrastructure implies providing greater safety for road users – particularly the most vulnerable road users who use non-motorised modes of transport – and reducing road traffic accidents. It's necessary to take into account all travel systems, going into detail about the traffic conditions according to the accident rate or environmental capacity and using physical segregation to protect the different road user groups when necessary.

Specific examples would include creating segregated bus/coach, cycling and motorcycle lanes in order to protect these groups and increase their safety, improving the efficiency of public transport with actions such as the development of platforms for public transport or the creation of a network of cyclable infrastructure in interurban areas.

Another aspect to bear in mind, particularly in terms of reducing accident rates, is adapting speeds to new criteria. These should consider the different types of most frequent users and the subsequent review of speed limits – mainly in urban areas and on secondary roads – in accordance with the changes to legislation to reduce speeds in urban areas which are being implemented.

People with reduced mobility must be able to easily access all mobility infrastructure and public transport, in line with the criteria for accessibility and

safety on public roads for people with sensory and physical disabilities or mobility difficulties.

Furthermore, it's necessary to review horizontal road surface markings and vertical traffic and road signs, as well as measures to contribute towards reducing the number of head-on and side-impact collisions, with actions such as the implementation of 2+1 roads.

The Ministry of the Vice-Presidency, Digital Policies and Territory annually conducts road safety impact assessments and road safety audits for the projects it prepares in relation to the Generalitat's roads. It also annually implements the Road Safety Inspection Plan for the Generalitat's roads that are already in service (in the operation and maintenance stage).

Schedule	Actions and indicators	Stakeholders
■ ■ ■	Define and implement the 2+1 Plan in the Generalitat's road network (5.2.01) Km of the road network with the Plan implemented	Ministry of the Vice-Presidency, Digital Policies and Territory and SCT
■ ■ ■	Monitor and assess the Plan for the Implementation of Traffic Separators on Conventional Single Carriageway Roads (5.2.02) Km of roads assessed	Ministry of the Vice-Presidency, Digital Policies and Territory and SCT
■ ■ ■	Draft and approve the transposition of Directive (EU) 2019/1936 of 23 October 2019 amending Directive 2008/96/EC on road infrastructure safety management (5.2.03) Drafting and approval of the transposition of the Directive	Ministry of the Vice-Presidency, Digital Policies and Territory
■ ■ ■	Promote road safety impact assessments and road safety audits, in accordance with Directive (EU) 2019/1936 of 23 October 2019 amending Directive 2008/96/EC on road infrastructure safety management (5.2.04) % of km audited in comparison to the total road network Number and % of roads audited by owner	Ministry of the Vice-Presidency, Digital Policies and Territory and provincial councils
■ ■ ■	Carry out road safety impact assessments and road safety audits (5.2.05) % of km audited Trend in the number of fatalities and seriously injured casualties on audited roads	Ministry of the Vice-Presidency, Digital Policies and Territory
■ ■ ■	Execute the Plan for Road Safety Inspections of the road network of the Generalitat and the Barcelona Provincial Council network (5.2.06) Km of roads inspected Number of serious and fatal accidents	Ministry of the Vice-Presidency, Digital Policies and Territory, SCT and Barcelona Provincial Council
■	Create a physical segregation design for vulnerable road user groups for the safety of all road users (5.2.07) Physical segregation actions implemented	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory and road network owners
■ ■ ■	Create platforms reserved for public transport (bus lanes and others) (5.2.08) Number of platforms created	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, transport service operators, local and supralocal authorities
■	Set out normative criteria for the design of the cycling network infrastructure (interurban and urban) (5.2.09) Setting out of the normative guidelines Km of the cycling network adapted	Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities and road network owners
■ ■ ■	Expand the interurban network of cycling and pedestrian lanes connecting different towns (5.2.10)	Ministry of the Vice-Presidency, Digital Policies and Territory, AMB, local and

Schedule	Actions and indicators	Stakeholders
	Number of km of new cycling and pedestrian lanes	supralocal authorities and road network owners
■ ■	Determine, by means of the decree implementing the Accessibility Act, the aspects and criteria for accessibility and safety on public roads for people with sensory and physical disabilities or mobility difficulties (5.2.11) Implementation actions carried out	SCT and Ministry of Social Rights
■ ■ ■	Promote the implementation of the Accessibility Act in urban sections as regards pavement width, gradients, etc. (5.2.12) Implementation actions carried out	Ministry of Social Rights, provincial councils and city councils
■ ■	Improve the procedures for action in cases of serious accidents involving major road traffic accidents (5.2.13) Improvement actions implemented	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, DGP, provincial councils and city councils
■ ■ ■	Conduct other studies in the area of safe road infrastructure (5.2.14) Number of studies conducted	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, provincial councils, Applus+ IDIADA and entities



FOCUS AREA 6

Develop the necessary structure for change management

This focus area seeks to strengthen the collaboration and coordination among the different public authorities (Generalitat of Catalonia, local and supralocal authorities) in terms of road safety and mobility policies so that key aspects in the area of safe mobility are addressed in a coordinated manner. In fact, without a cross-cutting approach, it will not be possible to create a framework that will enable us to face current and future mobility challenges. It's also necessary to promote collaboration between the government and civil society to strengthen the dynamics of community participation in public policies.

Furthermore, this focus area seeks to rethink the current structure of the traffic authority to address new mobility and road safety challenges in the future, as well as the structure of the traffic police and managing the exponential growth of the penalty system.

This last focus area can be further divided into five subareas, which include the actions contained in this Plan:

- **Public policies on mobility and road safety:** rethink the necessary structure to address new mobility challenges
- Strengthen **coordination and collaboration** with supralocal and local entities
- **Propose a legal framework** to adapt safe and sustainable mobility to the culture and paradigm shift
- **Plan strategies** for safe and sustainable mobility
- Support for road **victims**

6.1. Public policies on mobility and road safety: rethink the necessary structure to address new mobility challenges

The new road safety strategy in Catalonia, formulated around the National Pact for Safe and Sustainable Mobility (PNMSS) 2021–2030, proposes rethinking the structure of the SCT in order to address new challenges in safe and sustainable mobility. The ultimate objective is to set out cross-cutting policies with which to achieve active, safe and sustainable mobility, strengthen the policies for safe and sustainable mobility, road safety and traffic management, and become a benchmark for safe mobility policies in urban areas.

This is why it's essential to provide the Catalan Traffic Service with the necessary structure and size to assert leadership in these areas.

It's also a good idea to analyse the distribution of powers among the different public authorities to improve the effectiveness and efficiency of mobility and road safety policies, with the involvement of the private sector and the network of associations.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	Obtain full powers in terms of traffic and road safety in Catalonia (6.1.01) Actions carried out	SCT
■ ■ ■	Carry out technical projects for the analysis and improvement of road safety (6.1.02) Number of technical papers carried out	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities, entities and associations
■ ■ ■	Create the actions for the National Pact for Safe and Sustainable Mobility (PNMSS) 2021–2030, the Road Safety Plan and others through planning instruments (6.1.03) Annual edition of the programme of activities	SCT, Catalan Commission on Traffic and Road Safety (CCTSV) members, ministries of the Generalitat, local and supralocal authorities, other public and private entities and associations
■ ■ ■	Promote adhesion to the National Pact for Safe and Sustainable Mobility (PNMSS) 2021–2030 by the different public authorities and public and private entities (6.1.04) Number of entities that adhere to it during the three-year period	SCT, ministries of the Generalitat, local and supralocal authorities, other public and private entities and associations
■ ■ ■	Launch the educational model for the Chair of Road Safety Education and Training (6.1.05) Actions carried out with this model	SCT, Chair of Road Safety Education and Training (UAB) and Catalan Psychological Association

6.2. Strengthen coordination and collaboration with supralocal and local entities

In the fight to reduce accident rates, it's absolutely essential for the different public authorities with different powers to work in a coordinated manner, collaborating among themselves to move towards a safe and sustainable mobility model.

Supra-municipal entities must play a crucial role in terms of greater involvement in mobility policies, as well as the municipalities, which have a very important role to play in decision-making for mobility at the local level.

We propose creating a Council for towns, cities and villages for safe and sustainable mobility to exchange best practices and experiences with the following objectives:

- Promote safe and sustainable mobility as a public policy of the municipality
- Incentivise the local area based on the good outcomes achieved
- Improve the collection of information on accidents with casualties in the municipalities
- Create a technical advisory committee on urban road safety

The SCT will have to obtain new resources for the technical operation of this Council in order to have the appropriate technical means, materials and human resources to make it a reality.

Aside from this, it's necessary to continue promoting policies for safe and sustainable mobility at the municipal level by means of the following, among others:

- Local road safety plans
- The inclusion of road safety in urban mobility plans and workplace travel plans
- Carrying out analysis reports on accident rates on urban roads
- Technical advice to municipalities
- Management of the different forms of mobility

Schedule	Actions and indicators	Stakeholders
■ ■ ■	Create working groups for the improvement of road safety and traffic management (6.2.01) Number of working groups created	SCT, ministries of the Generalitat, CCTSV members, local and supralocal authorities, entities and associations
■ ■ ■	Draft local road safety plans to improve road safety in urban areas (6.2.02) Number of annual plans drafted	SCT and city councils
■ ■ ■	Draft technical papers on road safety to address specific road safety issues in the municipalities (6.2.03) Number of annual papers drafted	SCT and city councils
■ ■ ■	Advise municipalities on road safety and sustainable mobility (6.2.04) Number of enquiries made by the municipalities	SCT, Ministry of Climate Action, Food and Rural Agenda, local and supralocal authorities
■ ■	Create a Council for towns, cities and villages for safe and sustainable mobility to exchange best practices and proposals (6.2.05) Actions for the creation of the Council	SCT, Ministry of Climate Action, Food and Rural Agenda and city councils

6.3. Propose a legal framework to adapt safe and sustainable mobility to the culture and paradigm shift

Society in general and the public authorities in particular must address many aspects that will be raised by the shift towards sustainability in mobility patterns and the new automated and connected mobility. This is why it will be necessary to reconsider some legal aspects, such as liability in case of accidents, IT security, new technology regulation and, at the same time, formulate legal proposals that take into account not only motor vehicles but also all forms of mobility, mobility as a service, shared mobility and changes in the distribution of goods.

This is why it's important to set out the relevant changes to legislation that can respond to the new challenges and opportunities of the new mobility paradigm that's taking shape.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	Propose changes to road traffic legislation and legal areas related to road traffic accidents and road safety (6.3.01) Preparation and presentation of the proposed changes	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, CCTSV members, other entities and associations
■ ■	Support regulatory amendments that allow for the exchange of the necessary information to rectify the reckless behaviours of repeat offenders (administrative or criminal) (6.3.02)	SCT, Ministry of Justice, Ministry of Health and road victims' associations

Schedule	Actions and indicators	Stakeholders
	Regulatory amendments supported	
■ ■	Submit legal proposals in relation to bicycles in order to improve bicycle safety (6.3.03) Preparation and presentation of the proposals	SCT, local and supralocal authorities, entities and associations
■ ■ ■	Prepare legal proposals to prevent the negative effects of smoking inside vehicles (6.3.04) Preparation and presentation of the proposed changes	Ministry of Health
■ ■ ■	Study proposals for the regulation of mobility and road safety in relation to the most vulnerable road user groups (6.3.05) Studies conducted	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities, entities and associations
■ ■ ■	Promote the development of specific legislation for the regulation of traffic and road signs for motorcyclists (6.3.06) Actions carried out	SCT
■ ■	Promote the implementation of legislation on the road circulation of autonomous vehicles (6.3.07) Actions carried out	SCT and Ministry of the Vice-Presidency, Digital Policies and Territory

6.4. Plan strategies for safe and sustainable mobility

It's necessary to continue planning the different actions for safe and sustainable mobility through the three-year road safety plans, involving the different public and private institutions in the promotion, dissemination and planning of safe and sustainable mobility.

Assessing the different plans implemented is a crucial task that must be performed in the area of public policy planning. During the three-year period covered by this Plan, Catalonia's Strategic Road Safety Plan (PESVC) 2014–2020 will be assessed with an analysis of the achievement of the proposed objectives, as well as an assessment of the focus areas, strategic guidelines and key projects set up and the indicators deployed.

It's also important to promote community participation and consultation bodies such as the Catalan Commission on Traffic and Road Safety and the working groups that report to it to deal with specific issues requiring specific planning and management, as well as the participation of the different interdepartmental commissions that exist.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	<p>Lead, coordinate and disseminate the Road Safety Plan 2021–2023 and define the general objectives and content of the Road Safety Plan 2024–2026 (6.4.01)</p> <p>Preparation of the annual programme of activities Degree of achievement of the PSV 2021–2023 Preparation of the PSV 2024–2026</p>	SCT and Ministry of Home Affairs
■ ■ ■	<p>Set monitoring indicators for the planning instruments in order to verify the achievement of the objectives set (6.4.02)</p> <p>Setting out a system of assessment indicators</p>	SCT
■ ■ ■	<p>Assess the objectives and strategic guidelines of the Strategic Road Safety Plan 2014–2020 (6.4.03)</p> <p>Preparation and presentation of the assessment document</p>	SCT
■ ■ ■	<p>Set road safety targets in the action plans of the different public authorities and the other institutions involved, and follow up on the commitments (6.4.04)</p> <p>Monitoring and coordination actions carried out</p>	SCT, ministries of the Generalitat, local and supralocal authorities, road victims' associations and entities
■ ■ ■	<p>Support the Catalan Commission on Traffic and Road Safety, as well as the working groups that report to it and take part in them (6.4.05)</p> <p>Number of annual meetings by the CCTSV and the working groups</p>	SCT and CCTSV members
■ ■	<p>Create a Technical Cycling Commission linked to the Cycling Board (6.4.06)</p> <p>Creation of the Technical Commission</p>	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities, entities and associations
■ ■ ■	<p>Take part in different interdepartmental commissions related to traffic and road safety improvement (6.4.07)</p> <p>Number of meetings held</p>	SCT, Ministry of Business and Employment (ICSSL), Ministry of the Vice-Presidency, Digital Policies and Territory, local and supralocal authorities, road victims' associations and entities
■ ■ ■	<p>Take part in events and conferences organised by public and private entities (6.4.08)</p> <p>Number of conferences and events taken part in</p>	SCT, Ministry of the Vice-Presidency, Digital Policies and Territory, other ministries of the Generalitat, local and supralocal authorities, road victims' associations and other public and private entities
■ ■ ■	<p>Take part in different Spanish and international working groups related to road safety (6.4.09)</p> <p>Number of working groups in which it has taken part</p>	SCT and Ministry of the Vice-Presidency, Digital Policies and Territory

6.5. Support for road victims

Despite prevention efforts, improvements in the infrastructure and the arrival of autonomous vehicles, it will be necessary to continue paying special attention to all road victims. It's important to continue improving the support provided to casualties after an accident by increasing the services offered by the Road Victims Information and Support Services (SIAVT).

It's essential to continue collaborating with entities and road victims' associations in carrying out projects related to road safety and to make a concerted effort to improve immediate psychological support for road victims.

Furthermore, the aim is to extend support to victims who suffer very serious injuries as a result of a road traffic accident, that is, the survivors who should receive services and support immediately after.

Schedule	Actions and indicators	Stakeholders
■ ■ ■	<p>Promote the services offered by the SIAVT so it can become a more proactive service in terms of providing support to road victims (6.5.01)</p> <p>Number of enquiries by casualties made</p>	SCT, DGP, local and supralocal authorities and road victims' associations
■ ■ ■	<p>Extend mental health support services to road traffic casualties in fatal accidents and accidents with seriously injured casualties involving minors under 18 (6.5.02)</p> <p>Number of actions carried out</p>	SCT, SEM and road victims' associations
■ ■ ■	<p>Extend support services to seriously injured casualties of road traffic accidents (6.5.03)</p> <p>Number of activities carried out</p>	SCT, road victims' associations and public and private entities
■ ■ ■	<p>Collaborate in functions, conferences and events related to road safety and co-organise them, together with road victims' associations (6.5.04)</p> <p>Number of activities carried out</p>	SCT, road victims' associations and public and private entities

ACTIONS OF THE PSV SORTED BY THEME

These actions carried out have a direct impact on a number of key themes, sorted by the main factors and high-risk groups on which they have an impact. They are grouped as follows:

1. Pedestrians



Focus area-subarea code	Action
1.1.02	Draft a technical paper on vulnerable non-motorised user mobility
1.1.03	Promote modes of coexistence among pedal cyclists, drivers, motorcyclists, personal mobility vehicle users and pedestrians
1.1.10	Promote activities for the encouragement of active transport within the framework of the Interdepartmental and Intersectoral Plan for Public Health (PINSAP) and provide support
1.1.11	Prepare support materials for the Health Council for the promotion of active transport, road safety and road traffic injury prevention
1.4.01	Increase space for pedestrians and reduce public space for motor vehicles in urban areas
1.4.02	Collaborate with city councils in the extension of pedestrian zones and 30 km/h zones in town centres by carrying out technical traffic calming works
1.4.06	Introduce traffic light regulations favourable to public transport and mobility on bicycles and on foot to the detriment of private vehicles
2.2.01	Introduce measures to reduce speed limits in urban areas, through roads and peri-urban areas
2.2.02	Review the layouts of pedestrian crossings in order to improve their safety conditions
2.2.03	Tailor specific traffic and road signs aimed at pedestrians
2.2.04	Increase prevention and control campaigns for risky behaviours to protect pedestrians
2.2.05	Include video surveillance systems (ITS) on roads to protect pedestrians, particularly in municipalities that do not have a local police force
2.2.06	Set out safe routes for pedestrians on interurban journeys
3.2.10	Promote safe and sustainable school roads
3.2.11	Prepare a technical dossier on school settings and access to these settings
4.2.10	Promote advanced driver-assistance systems (ADAS) and the development of new technologies applied to driving to improve safety for pedestrians
5.2.07	Create a physical segregation design for vulnerable road user groups for the safety of all road users
5.2.10	Expand the interurban network of cycling and pedestrian lanes connecting different towns
5.2.11	Determine, by means of the decree implementing the Accessibility Act, the aspects and criteria for accessibility and safety on public roads for people with sensory and physical disabilities or mobility difficulties
5.2.12	Promote the implementation of the Accessibility Act in urban sections as regards pavement width, gradients, etc.
6.3.05	Study proposals for the regulation of mobility and road safety in relation to the most vulnerable road user groups



2. Pedal cyclists and PMV users

Focus area-subarea code	Action
1.1.01	Promote bicycle mobility and the use of safe cycling lanes
1.1.02	Draft a technical paper on vulnerable non-motorised user mobility
1.1.03	Promote modes of coexistence among pedal cyclists, drivers, motorcyclists, personal mobility vehicle users and pedestrians
1.1.08	Create high-capacity bicycle parking facilities at public transport stations
1.3.01	Prepare a technical dossier of recommendations for the safe road circulation of personal mobility vehicles (PMVs)
1.3.02	Encourage training activities on the use of PMVs
1.4.06	Introduce traffic light regulations favourable to public transport and mobility on bicycles and on foot to the detriment of private vehicles
2.1.09	Include PMVs in the accident databases
2.3.01	Take part in the Cycling Board and the Technical Commission
2.3.02	Collaborate in boosting bicycle use through national and international acts and events
2.3.03	Provide technical support to municipalities for the design and implementation of cycling infrastructure and for the promotion of safe cycling
2.3.04	Lend continuity to the networks of cycling routes in urban environments and improve the safety of cycling lanes
2.3.05	Update the <i>Manual per al disseny de vies ciclistes de Catalunya</i> ('Manual on the Design of Cycling Routes in Catalonia') and include recommendation for the urban road network
2.3.06	Promote pedal cyclist visibility
2.3.07	Prepare an annual follow-up report to analyse pedal cyclist accident rates and make recommendations for improvement
2.3.08	Conduct studies and compile data on vulnerable road users in urban and interurban areas
2.3.09	Analyse and define the action plan for shared roads, monitor it and participate in the working group
2.3.10	Prepare the Plan for the Flow Capacity of Pedal Cyclists on the Road Network, making use of mobile applications
2.3.11	Carry out campaigns and actions to promote cycling in daily life aimed at different user groups and professional groups
3.2.06	Teach safe, sustainable and healthy mobility through practical activities in schools and during free time, and study, if necessary, whether to increase the activities including training on new forms of mobility
3.4.06	Include content on personal mobility vehicles as well as other sustainable means of transport in training courses for trainers, as well as content on efficient driving and the use of applied new technologies
5.2.07	Create a physical segregation design for vulnerable road user groups for the safety of all road users
5.2.09	Set out normative criteria for the design of the cycling network infrastructure (interurban and urban)
5.2.10	Expand the interurban network of cycling and pedestrian lanes connecting different towns
6.3.03	Submit legal proposals in relation to bicycles in order to improve bicycle safety
6.3.05	Study proposals for the regulation of mobility and road safety in relation to the most vulnerable road user groups
6.4.06	Create a Technical Cycling Commission linked to the Cycling Board



3. Motorcyclists

Focus area-subarea code	Action
1.1.03	Promote modes of coexistence among pedal cyclists, drivers, motorcyclists, personal mobility vehicle users and pedestrians
1.4.05	Promote motorcycle and moped parking on the road and do away with pavement parking for them
2.4.01	Continue deploying the Formació 3.0 programme on open roads and spread the word about the training
2.4.02	Design and promote training for motorcyclists who travel for work
2.4.03	Analyse the conditions, experience and requirements needed to drive motorcycles among the different categories
2.4.04	Analyse motorcyclist accident rates from an infrastructure perspective
2.4.05	Make proposals and carry out actions for the improvement of road infrastructure to increase the safety of motorcyclists
2.4.06	Adapt road infrastructure to motorcyclists with the implementation of specific horizontal road surface markings and vertical traffic and road signs to improve protection for them, particularly in the sections with higher-than-average congestion or greater risk
2.4.07	Tailor specific traffic and road signs on the roadways regarding dangerous turns for motorcyclists
2.4.08	Study, analyse and promote the segregation of motorcycles on the access roads to major cities
2.4.09	Look into the mobility patterns of motorcyclists in order to analyse accident rates and improve motorcycle safety
2.4.10	Study the compulsory nature of active and passive safety features to improve protection for motorcyclists
2.4.11	Develop and deploy new forms of enforcement to reduce motorcyclist accidents
2.4.12	Carry out comprehensive control campaigns on motorcyclists' behaviour and on the condition of motorcycles and mopeds (PREMOT controls)
5.2.07	Create a physical segregation design for vulnerable road user groups for the safety of all road users
6.3.05	Study proposals for the regulation of mobility and road safety in relation to the most vulnerable road user groups
6.3.06	Promote the development of specific legislation for the regulation of traffic and road signs for motorcyclists

4. Seniors



Focus area-subarea code	Action
2.5.01	Analyse the tools to assess cognitive functions related to safe driving and provide support
2.5.02	Make progress in improving communication between traffic and health authorities in order to provide the most appropriate response possible to the needs of different high-risk groups, while respecting the privacy of their personal data
2.5.03	Improve traffic and road signs in settings with a large number of seniors
2.5.04	Raise the population's awareness about the risks faced by the elderly in terms of mobility and promote the updating of knowledge and skills of the people who drive
3.3.02	Carry out intergenerational road safety training programmes
3.5.01	Analyse the cases where there are deficiencies in psychophysical aptitude detected in drivers holding a valid driving licence
4.4.03	Manage and adopt measures to avoid the risk of exclusion of the elderly or people with problems accessing technologies related to autonomous and connected vehicles
6.3.05	Study proposals for the regulation of mobility and road safety in relation to the most vulnerable road user groups

5. Safe and sustainable mobility



Focus area-subarea code	Action
1.1.04	Improve goods transport management in urban areas and last-mile logistics
1.1.05	Promote workplace travel plans and the use of sustainable modes of transport in work-related mobility
1.1.06	Promote the use of public transport over private transport
1.1.07	Promote on-demand public transport by making timetables and frequency more flexible, particularly to facilitate travel to workplaces and industrial estates
1.1.09	Increase park and ride facilities, private vehicle parking facilities at strategic points outside cities
1.1.10	Promote activities for the encouragement of active transport within the framework of the Interdepartmental and Intersectoral Plan for Public Health (PINSAP) and provide support
1.1.11	Prepare support materials for the Health Council for the promotion of active transport, road safety and road traffic injury prevention
1.2.01	Expand Low Emission Zones (LEZs)
1.2.02	Participate in working groups to monitor LEZs
1.2.03	Analyse and apply traffic management solutions during air pollution episodes, as well as improving road safety
1.2.04	Promote electric vehicles and other vehicles that use renewable energy sources as an alternative to fossil fuels
1.3.03	Disseminate shared mobility services by means of mobility plans and workplace travel plans
1.4.02	Collaborate with city councils in the extension of pedestrian zones and 30 km/h zones in town centres by carrying out technical traffic calming works
1.4.03	Promote healthy routes nearby to encourage active mobility
1.4.04	Reduce parking for motor vehicles in city centres

Focus area-subarea code	Action
1.4.06	Introduce traffic light regulations favourable to public transport and mobility on bicycles and on foot to the detriment of private vehicles
3.2.10	Promote safe and sustainable school roads
3.2.12	Incentivise the use of sustainable means of transport and healthy mobility habits in schools
3.6.04	Promote vehicle fleet renewal at companies in order to have a most sustainable fleet that pollutes less
3.6.05	Promote vehicle sharing and collective transport in commuting to work
4.1.02	Create a working group to design the transition towards electric mobility
4.1.03	Create a network of electric vehicle charging infrastructure with the expansion of charging points and charging stations across the entire territory
4.1.05	Advocate multimodality, particularly the most energy-efficient modes
4.1.08	Control vehicle emissions through the use of OBD systems during the vehicle inspection
4.1.09	Develop solutions to measure nitrogen oxides and microparticles at vehicle inspection centres
4.1.10	Raise awareness about improving vehicle occupancy in order to reduce the number of vehicles in cities and unnecessary travel with the subsequent effects on traffic congestion
5.1.03	Promote the research and application of new sustainable materials for infrastructure
5.2.08	Create platforms reserved for public transport (bus lanes and others)
5.2.10	Expand the interurban network of cycling and pedestrian lanes connecting different towns
6.2.04	Advise municipalities on road safety and sustainable mobility
6.2.05	Create a Council for towns, cities and villages for safe and sustainable mobility

6. Risk factors: alcohol and other drugs, speed and distractions

Focus area-subarea code	Action
2.1.12	Create a comprehensive plan against speeding that will provide for the management of these risky behaviours
2.1.13	Expand average speed control over a section of road
2.1.14	Study average speeds across the whole of Catalonia to improve the analysis of accident rates
2.1.15	Review the speed limits allowed on the road network in order to adapt them to the features of the roads and to improve road safety
2.1.20	Combat road traffic offences
2.1.21	Carry out speed enforcement campaigns
2.1.22	Study the possibility of modifying the legal alcohol limit to move towards a 0.0 g/l limit
2.1.23	Perform random testing for alcohol, other drugs and psychoactive drugs
2.1.24	Carry out surveillance and control campaigns on the use of alcohol and other drugs
2.1.25	Carry out campaigns to raise awareness among the population about the effects of certain psychoactive drugs on driving
2.1.26	Conduct clinical research projects on the effects of accidents



Focus area-subarea code	Action
2.1.27	Increase prevention and control actions for the use of mobile phones while driving and distractions
2.1.28	Carry out inspection campaigns on the transport of goods and passengers related to driving hours, rest periods and the maximum permissible weight of the vehicle
2.1.30	Implement new intelligent video surveillance systems to improve traffic management and information and control of driving offences
2.1.31	Apply new technologies to improve preventive road safety controls
2.1.32	Continuously improve the penalty procedure
2.1.33	Review the penalties for certain risky behaviours and propose modifications
2.2.04	Increase prevention and control campaigns for risky behaviours to protect pedestrians
2.4.11	Develop and deploy new forms of enforcement to reduce motorcyclist accidents
3.3.06	Launch communication campaigns on risk and environmental factors
3.4.01	Raise awareness about the risks of using alcohol, other drugs and medication, as well as the distractions caused by using mobile phones while driving

7. Processing of accident statistics

Focus area-subarea code	Action
2.1.01	Analyse and improve traffic accident and mobility databases in order to make them compatible with other systems and obtain more complete information
2.1.02	Strengthen coordination with the traffic police to improve accident information systems
2.1.04	Expand the risk exposure information system of the Catalan road network
2.1.05	Implement the necessary methods to obtain the GPS coordinates of the accidents attended by the Catalan polices forces
2.1.06	Include the three-digit code to assign the accident type to each case to get a more accurate analysis of the causes of
2.1.07	Execute the procedure for the systematic analysis of serious and fatal accidents on the road network
2.1.08	Create the database of reconstructed accidents
2.1.09	Include PMVs in the accident databases
2.1.10	Include a gender perspective in the study of accidents and risky behaviours while driving
2.1.14	Study average speeds across the whole of Catalonia to improve the analysis of accident rates
2.1.17	Study accident rates due to head-on collisions
2.1.18	Study specific accident rates due to the appearance of animals on the road
2.1.19	Study accident rates with casualties on Catalonia's roads
2.3.07	Prepare an annual follow-up report to analyse pedal cyclist accident rates and make recommendations for improvement
2.3.08	Conduct studies and compile data on vulnerable road users in urban and interurban areas
2.4.04	Analyse motorcyclist accident rates from an infrastructure perspective
2.4.09	Look into the mobility patterns of motorcyclists in order to analyse accident rates and improve motorcycle safety



Focus area-subarea code	Action
3.6.01	Set out procedures for the exchange of information on work-related road traffic accidents
3.6.02	Prepare a study on work-related road traffic accidents based on the exchange of information on road traffic accidents and accidents at work (Phase 2)

8. Education for safe and sustainable mobility



Focus area-subarea code	Action
1.3.02	Encourage training activities on the use of PMVs
3.2.01	Deploy training for safe, sustainable and healthy mobility together with the Ministry of Education
3.2.02	Promote and support educational interventions for safe, sustainable and healthy mobility within the framework of a competency model and provide support
3.2.03	Update the handling of road safety education and sustainable mobility in schools
3.2.04	Collaborate with public and private entities that take part in education for safe and sustainable mobility and promote it
3.2.05	Monitor, assess and propose interventions in schools (road safety circuits, 'Game Over', specific campaigns, etc.)
3.2.06	Teach safe, sustainable and healthy mobility through practical activities in schools and during free time, and study, if necessary, whether to increase the activities including training on new forms of mobility
3.2.07	Educate for safe and sustainable mobility in schools
3.2.08	Collaborate in the drafting and subsequent dissemination of a manifesto advocating active, safe and sustainable school mobility
3.2.09	Consider the appointment of a person of reference in the area of mobility in schools, based on the pilot experiments in the territory
3.2.10	Promote safe and sustainable school roads
3.2.11	Prepare a technical dossier on school settings and access to these settings
3.2.12	Incentivise the use of sustainable means of transport and healthy mobility habits in schools
6.1.05	Launch the educational model for the Chair of Road Safety Education and Training

9. Driver training



Focus area-subarea code	Action
3.3.01	Promote awareness and information on drugs and driving among authorised drivers' check centres and in the health sector
3.4.01	Raise awareness about the risks of using alcohol, other drugs and medication, as well as the distractions caused by using mobile phones while driving
3.4.02	Propose driver training improvements
3.4.03	Provide resources for the improvement of driver training
3.4.04	Assess driving schools and authorised drivers' check centres
3.4.05	Train professional staff: road safety education trainers and driving school directors

Focus area-subarea code	Action
3.4.06	Include content on personal mobility vehicles as well as other sustainable means of transport in training courses for trainers, as well as content on efficient driving and the use of applied new technologies
3.4.07	Include knowledge of the gender and cultural perspectives in the training of driving instructors
3.4.08	Develop the curriculum for the advanced certificate for safe and sustainable mobility training
3.5.01	Analyse the cases where there are deficiencies in psychophysical aptitude detected in drivers holding a valid driving licence
6.1.05	Launch the educational model for the Chair of Road Safety Education and Training

10. Repeat offenders

Focus area-subarea code	Action
2.1.22	Study the possibility of modifying the legal alcohol limit to move towards a 0.0 g/l limit
2.1.33	Review the penalties for certain risky behaviours and propose modifications
3.5.02	Develop driver awareness and re-education courses and assess the procedures and outcomes
3.5.03	Train professional staff and observers who take part in driver re-education and road safety awareness courses related to the points-based licence system
3.5.04	Study the possibility of having to attend training courses instead of paying fines for certain types of driving offences
3.5.05	Propose the application of measures for repeat and multiple offenders
3.5.06	Analyse the impact of the points-based licence system on the offences committed by drivers
6.3.02	Support regulatory amendments that allow for the exchange of the necessary information to rectify the reckless behaviours of repeat offenders (administrative or criminal)





11. Awareness-raising and communication

Focus area-subarea code	Action
2.1.25	Carry out campaigns to raise awareness among the population about the effects of certain psychoactive drugs on driving
2.3.11	Carry out campaigns and actions to promote cycling in daily life aimed at different user groups and professional groups
2.5.04	Raise the population's awareness about the risks faced by the elderly in terms of mobility and promote the updating of knowledge and skills of the people who drive
3.1.01	Take part in road safety campaigns
3.1.02	Carry out campaigns to promote collaborative driving instead of competitive driving
3.1.03	Carry out road safety advertising actions on social media
3.1.04	Promote the writing of the InfoTrànsit blog
3.3.01	Promote awareness and information on drugs and driving among authorised drivers' check centres and in the health sector
3.3.02	Carry out intergenerational road safety training programmes
3.3.03	Carry out actions to disseminate best practices and information on compliance with regulations aimed at companies, persons concerned and associations representing the goods and passenger transport sector
3.3.06	Launch communication campaigns on risk and environmental factors
3.3.07	Carry out awareness-raising campaigns aimed at drivers so they can protect themselves against natural hazards and in case of risk and crisis situations due to weather phenomena (snowfall, windstorms, floods, etc.) and forest fire risk
3.4.01	Raise awareness about the risks of using alcohol, other drugs and medication, as well as the distractions caused by using mobile phones while driving
3.5.02	Develop driver awareness and re-education courses and assess the procedures and outcomes
3.6.14	Carry out information and awareness-raising campaigns on the risks of ordinary commuting
3.6.15	Update information on the Ministry of Business and Employment website specifically devoted to occupational road safety
4.1.10	Raise awareness about improving vehicle occupancy in order to reduce the number of vehicles in cities and unnecessary travel with the subsequent effects on traffic congestion
6.4.08	Take part in events and conferences organised by public and private entities
6.5.04	Collaborate in functions, conferences and events related to road safety and co-organise them, together with road victims' associations

12. Support for road victims



Focus area-subarea code	Action
6.5.01	Promote the services offered by the SIAVT so it can become a more proactive service in terms of providing support to road victims
6.5.02	Extend mental health support services to road traffic casualties in fatal accidents and accidents with seriously injured casualties involving minors under 18
6.5.03	Extend support services to seriously injured casualties of road traffic accidents
6.5.04	Collaborate in functions, conferences and events related to road safety and co-organise them, together with road victims' associations

13. Occupational road safety



Focus area-subarea code	Action
1.1.05	Promote workplace travel plans and the use of sustainable modes of transport in work-related mobility
1.1.07	Promote on-demand public transport by making timetables and frequency more flexible, particularly to facilitate travel to workplaces and industrial estates
1.3.03	Disseminate shared mobility services by means of mobility plans and workplace travel plans
3.3.03	Carry out actions to disseminate best practices and information on compliance with regulations aimed at companies, persons concerned and associations representing the goods and passenger transport sector
3.3.05	Promote the actions of the transport and logistics working group
3.6.01	Set out procedures for the exchange of information on work-related road traffic accidents
3.6.02	Prepare a study on work-related road traffic accidents based on the exchange of information on road traffic accidents and accidents at work (Phase 2)
3.6.03	Analyse the changes in mobility with the implementation of remote working
3.6.04	Promote vehicle fleet renewal at companies in order to have a most sustainable fleet that pollutes less
3.6.05	Promote vehicle sharing and collective transport in commuting to work
3.6.06	Make proposals to include occupational road safety in occupational hazard prevention plans and provide companies with support to draft them
3.6.07	Train technical staff for occupational hazard prevention in terms of road safety
3.6.08	Promote and provide educational resources for information and training in occupational road safety aimed at employees and companies
3.6.09	Prepare informative/training materials on occupational road safety for employees and companies. Preparation of guides.
3.6.10	Design and hold online courses on road safety at work aimed at employees
3.6.11	Hold in-person courses on road safety at work aimed at employees
3.6.12	Hold in-person and online courses on road safety at work aimed at government employees
3.6.13	Hold the seminar 'How to organize safe work-related travel in different territories'
3.6.14	Carry out information and awareness-raising campaigns on the risks of ordinary commuting

Focus area-subarea code	Action
3.6.15	Update information on the Ministry of Business and Employment website specifically devoted to occupational road safety
3.6.16	Collaborate with city councils in the drafting of technical papers to improve road safety on industrial estates

14. Efficient and safe vehicles

Focus area-subarea code	Action
1.2.04	Promote electric vehicles and other vehicles that use renewable energy sources as an alternative to fossil fuels
2.4.10	Study the compulsory nature of active and passive safety features to improve protection for motorcyclists
3.4.06	Include content on personal mobility vehicles as well as other sustainable means of transport in training courses for trainers, as well as content on efficient driving and the use of applied new technologies
3.6.04	Promote vehicle fleet renewal at companies in order to have a most sustainable fleet that pollutes less
4.1.02	Create a working group to design the transition towards electric mobility
4.1.03	Create a network of electric vehicle charging infrastructure with the expansion of charging points and charging stations across the entire territory
4.1.04	Promote the installation of active and passive safety devices in standard vehicles
4.1.05	Advocate multimodality, particularly the most energy-efficient modes
4.1.06	Reduce the number of vehicles skipping vehicle inspections to the extent possible by launching new campaigns with authorised centres
4.1.07	Monitor and keep track of compliance with the obligation to pass the vehicle inspection regularly
4.1.08	Control vehicle emissions through the use of OBD systems during the vehicle inspection
4.1.09	Develop solutions to measure nitrogen oxides and microparticles at vehicle inspection centres
4.2.10	Promote advanced driver-assistance systems (ADAS) and the development of new technologies applied to driving to improve safety for pedestrians



15. Road infrastructure

Focus area-subarea code	Action
1.4.08	Carry out technical studies to improve road safety on through roads
1.4.09	Address the problems arising from through roads by means of coordinated management between the owner of the road, the municipalities involved and the relevant traffic authority, particularly with regard to the implementation of traffic calming measures to protect vulnerable road users
2.1.15	Review the speed limits allowed on the road network in order to adapt them to the features of the roads and to improve road safety
2.2.06	Set out safe routes for pedestrians on interurban journeys
2.3.03	Provide technical support to municipalities for the design and implementation of cycling infrastructure and for the promotion of safe cycling



Focus area-subarea code	Action
2.3.09	Analyse and define the action plan for shared roads, monitor it and participate in the working group
2.4.05	Make proposals and carry out actions for the improvement of road infrastructure to increase the safety of motorcyclists
2.4.06	Adapt road infrastructure to motorcyclists with the implementation of specific horizontal road surface markings and vertical traffic and road signs to improve protection for them, particularly in the sections with higher-than-average congestion or greater risk
2.4.07	Tailor specific traffic and road signs on the roadways regarding dangerous turns for motorcyclists
2.4.08	Study, analyse and promote the segregation of motorcycles on the access roads to major cities
4.1.03	Create a network of electric vehicle charging infrastructure with the expansion of charging points and charging stations across the entire territory
4.4.01	Support the addition of autonomous and connected vehicles: Catalonia Living Lab
5.1.01	Promote the adaptation of infrastructure to autonomous and connected mobility
5.1.03	Promote the research and application of new sustainable materials for infrastructure
5.1.05	Implement the programmes included in the strategic focus area of operating the road network of the Generalitat
5.1.06	Implement the programmes included in the strategic focus area of operating the road network of the Generalitat
5.1.07	Asses the road network of the Generalitat using the EuroRAP Star Rating methodology
5.2.01	Define and implement the 2+1 Plan in the Generalitat's road network
5.2.02	Monitor and assess the Plan for the Implementation of Traffic Separators on Conventional Single Carriageway Roads
5.2.03	Draft and approve the transposition of Directive (EU) 2019/1936 of 23 October 2019 amending Directive 2008/96/EC on road infrastructure safety management
5.2.04	Promote road safety impact assessments and road safety audits, in accordance with Directive (EU) 2019/1936 of 23 October 2019 amending Directive 2008/96/EC on road infrastructure safety management
5.2.05	Carry out road safety impact assessments and road safety audits
5.2.06	Execute the Plan for Road Safety Inspections of the road network of the Generalitat and the Barcelona Provincial Council network
5.2.07	Create a physical segregation design for vulnerable road user groups for the safety of all road users
5.2.08	Create platforms reserved for public transport (bus lanes and others)
5.2.09	Set out normative criteria for the design of the cycling network infrastructure (interurban and urban)
5.2.10	Expand the interurban network of cycling and pedestrian lanes connecting different towns
5.2.11	Determine, by means of the decree implementing the Accessibility Act, the aspects and criteria for accessibility and safety on public roads for people with sensory and physical disabilities or mobility difficulties
5.2.13	Improve the procedures for action in cases of serious accidents involving major road traffic accidents
5.2.14	Conduct other studies in the area of safe road infrastructure



16. Intelligent information and traffic management systems

Focus area-subarea code	Action
1.2.03	Analyse and apply traffic management solutions during air pollution episodes, as well as improving road safety
1.4.07	Adapt the routes used by heavy vehicles in transit through urban areas and through roads
2.1.03	Share information on mobility and traffic among all stakeholders
2.1.30	Implement new intelligent video surveillance systems to improve traffic management and information and control of driving offences
2.2.05	Include video surveillance systems (ITS) on roads to protect pedestrians, particularly in municipalities that do not have a local police force
3.1.05	Collaborate with universities, scientific institutions and advanced research centres
3.1.06	Take part in European and international projects and increase the presence of the SCT on the international scene
3.1.07	Organise congresses and conferences related to traffic operation and management and road safety and take part in them
3.3.05	Promote the actions of the transport and logistics working group
4.2.02	Launch integrated mobility service platforms
4.2.03	Update the Catalan Traffic Service app
4.2.04	Guarantee and provide citizens with real-time information based on ITS systems
4.2.05	Implement the actions set out in the ITS Plan 21–23
4.2.06	Deploy the SCT's aircraft assets, whether fixed wing or rotary wing
4.2.07	Implement special road traffic, planning and regulation measures to improve road safety and increase flow capacity
4.2.08	Disseminate the network of mandatory routes for safety reasons for vehicles transporting dangerous or hazardous goods
4.2.09	Create and disseminate a network of suitable routes for road safety reasons for vehicles under the special transport access regime or in the form of the European Modular System
5.1.04	Approve and implement the Maintenance Plan for ITS equipment in the Catalan road network
5.2.13	Improve the procedures for action in cases of serious accidents involving major road traffic accidents

17. Challenges of autonomous and connected mobility



Focus area-subarea code	Action
3.1.05	Collaborate with universities, scientific institutions and advanced research centres
3.1.06	Take part in European and international projects and increase the presence of the SCT on the international scene
4.1.01	Develop new satellite navigation technologies and applications
4.2.01	Promote the adaptation of mobility service operators to autonomous and connected mobility
4.2.05	Implement the actions set out in the ITS Plan 21–23
4.4.01	Support the addition of autonomous and connected vehicles: Catalonia Living Lab

Focus area-subarea code	Action
4.4.02	Create a working group to design the transition towards autonomous and connected mobility
4.4.03	Manage and adopt measures to avoid the risk of exclusion of the elderly or people with problems accessing technologies related to autonomous and connected vehicles
5.1.01	Promote the adaptation of infrastructure to autonomous and connected mobility
5.1.02	Set up controlled and segregated environments for autonomous driving
5.1.03	Promote the research and application of new sustainable materials for infrastructure
5.1.04	Approve and implement the Maintenance Plan for ITS equipment in the Catalan road network
6.3.07	Promote the implementation of legislation on the circulation of autonomous vehicles on public roads

18. Planning for safe and sustainable mobility

Focus area-subarea code	Action
1.1.11	Prepare support materials for the Health Council for the promotion of active transport, road safety and road traffic injury prevention
1.4.02	Collaborate with city councils in the extension of pedestrian zones and 30 km/h zones in town centres by carrying out technical traffic calming works
1.4.08	Carry out technical studies to improve road safety on through roads
1.4.09	Address the problems arising from through roads by means of coordinated management between the owner of the road, the municipalities involved and the relevant traffic authority, particularly with regard to the implementation of traffic calming measures to protect vulnerable road users
2.1.02	Strengthen coordination with the traffic police to improve accident information systems
2.1.03	Share information on mobility and traffic among all stakeholders
2.1.29	Create a working group for coordination with the traffic police
2.3.03	Provide technical support to municipalities for the design and implementation of cycling infrastructure and for the promotion of safe cycling
2.5.02	Make progress in improving communication between traffic and health authorities in order to provide the most appropriate response possible to the needs of different high-risk groups, while respecting the privacy of their personal data
3.1.05	Collaborate with universities, scientific institutions and advanced research centres
3.1.06	Take part in European and international projects and increase the presence of the SCT on the international scene
3.2.04	Collaborate with public and private entities that take part in education for safe and sustainable mobility and promote it
3.6.16	Collaborate with city councils in the drafting of technical papers to improve road safety on industrial estates
4.2.05	Implement the actions set out in the ITS Plan 21–23
6.1.01	Obtain full powers in terms of traffic and road safety in Catalonia
6.1.02	Carry out technical projects for the analysis and improvement of road safety
6.1.03	Create the actions for the National Pact for Safe and Sustainable Mobility (PNMSS) 2021–2030, the Road Safety Plan 2021–2023 and others through planning instruments



Focus area-subarea code	Action
6.1.04	Promote adhesion to the National Pact for Safe and Sustainable Mobility (PNMSS) 2021–2030 by the different public authorities and public and private entities
6.1.05	Launch the educational model for the Chair of Road Safety Education and Training
6.2.01	Create working groups for the improvement of road safety and traffic management
6.2.02	Draft local road safety plans to improve road safety in urban areas
6.2.03	Draft technical papers on road safety to address specific road safety issues in the municipalities
6.2.04	Advise municipalities on road safety and sustainable mobility
6.2.05	Create a Council for towns, cities and villages for safe and sustainable mobility to exchange best practices and proposals
6.3.01	Propose changes to road traffic legislation and legal areas related to road traffic accidents and road safety
6.3.02	Support regulatory amendments that allow for the exchange of the necessary information to rectify the reckless behaviours of repeat offenders (administrative or criminal)
6.3.03	Submit legal proposals in relation to bicycles in order to improve bicycle safety
6.3.04	Prepare legal proposals to prevent the negative effects of smoking inside vehicles
6.3.05	Study proposals for the regulation of mobility and road safety in relation to the most vulnerable road user groups
6.3.06	Promote the development of specific legislation for the regulation of traffic and road signs for motorcyclists
6.3.07	Promote the implementation of legislation on the circulation of autonomous vehicles on public roads
6.4.01	Lead, coordinate and disseminate the Road Safety Plan 2021–2023 and define the general objectives and content of the Road Safety Plan 2024–2026
6.4.02	Set monitoring indicators for the planning instruments in order to verify the achievement of the objectives set
6.4.03	Assess the objectives and strategic guidelines of the Strategic Road Safety Plan 2014–2020
6.4.04	Set road safety targets in the action plans of the different public authorities and the other institutions involved, and follow up on the commitments
6.4.05	Support the Catalan Commission on Traffic and Road Safety, as well as the working groups that report to it and take part in them
6.4.06	Create a Technical Cycling Commission linked to the Cycling Board
6.4.07	Take part in different interdepartmental commissions related to traffic and road safety improvement
6.4.08	Take part in events and conferences organised by public and private entities
6.4.09	Take part in different Spanish and international working groups related to road safety
6.5.04	Collaborate in functions, conferences and events related to road safety and co-organise them, together with road victims' associations



6.ANNEX

ACTIONS OF THE INTELLIGENT TRANSPORT (ITS) SYSTEM

Today's societies are keeping pace with technology. In fact, every day, incalculable amounts of data are captured by sensors found in our immediate environment in a simple and inexpensive manner, thanks to the so-called 'Internet of Things' (smartphones, cameras and a long list of technological devices capable of remotely sending many parameters by means of communications systems in real time).

In this regard, transport infrastructure cannot lag behind, and every day, there are more advanced technologies that have started to get integrated into a new collaborative model. In it, vehicles simultaneously communicate with the infrastructure and other vehicles running around them. Thanks to this qualitative leap, known as Cooperative Intelligent Transport Systems (C-ITS) – and as a forerunner of the increasingly mentioned autonomous driving – it's possible to manage vehicle traffic on our roads much more efficiently while making great strides in terms of road safety.

It will come as no surprise that the Catalan Traffic Service's commitment is based on these principles, as its day-to-day-operations seek to manage all vehicle traffic on Catalan roads as efficiently and effectively as possible, without neglecting the objective of bringing down accident statistics.

The SCT has priority objectives for intelligent traffic management and relies on CIVICAT to achieve them, which contributes to:

- Improve road safety
- Improve traffic flow and organisation
- Improve information for users
- Quickly resolve incidents and emergencies
- Manage special traffic operations
- Carry out technical and operations coordination with other bodies and public authorities to address and deal with situations with intended or unintended impacts on roads

Strategic objectives of the ITS Plan 2021–2023

Two types of objectives have been defined:

- General strategic objectives (GSO)
- Cross-cutting strategic objectives (CSO)

General strategic objectives (GSO) are of great importance and on which the entire functional structure of this traffic management system will rest for the coming years. All actions plans must contribute towards achieving these objectives, which are as follows:

- **GSO 1 Information management.** Maintain, guarantee and provide citizens with real-time information based on efficient, scaled and accessible ITS systems
- **GSO 2 Intermodal management.** Develop systems and tools to support efficient traffic management in all its modes, favouring the connection of the different systems and promoting safe and sustainable forms of transport
- **GSO 3 Deployment of C-ITS systems.** Adapt to the new mobility paradigm brought about by the emergence of connected and autonomous vehicles and mobility as a service (Maas)

Aside from the general strategic objectives mentioned above, there are other objectives that have a horizontal impact on them. Based on this definition, it could be said that what we call **cross-cutting strategic objectives (CSO)** are those that have to provide supplementary aspects that are considered important but horizontal in nature. This is because they are found in many actions that are carried out regardless of the general objective.

These are the following:

- **CSO 1 Road safety.** It serves as a tool to facilitate the achievement of the objectives of the Road Safety Plan in force by making all actions compatible with this Plan
- **CSO 2 Sustainability and the environment.** The proposed actions must serve to improve traffic flow and avoid traffic congestion. They will also have to contribute towards improving air quality, the environment, noise pollution, etc. by means of actions that directly or indirectly pursue this goal
- **CSO 3 Internationalisation.** The proposed actions are deployed to the extent possible, using as references international recommendations and the experience of other countries around us, and above all, the provisions of Directive 2010/40/EU on the compatibility, interoperability and continuity of ITS solutions across Europe. What's more, the actions must follow the criteria implemented by international quality (ISO) and occupational health and safety systems

Below is a graph showing the Plan's ITS actions:

		GSO 1. Information management			GSO 2. Intermodal management				GSO 3. Deployment of C-ITS systems			Cross-cutting strategic objectives (CSO)		
Code	Action title	I.1 New sources of information	I.2 Data quality	I.3 Vulnerable road users	G.1 Road network	G.2 CIVICAT	G.3 Intermodality	G.4 Heavy vehicles	Connected vehicles	Autonomous vehicles	MaaS (Mobility as a Service)	Road safety	Sustainability and the environment	International isation
1 (SGIT)	Develop new applications to improve processes to file for authorisations	X			X		X	X				X		
2 (SGIT)	Collaborate with universities, scientific institutions and advanced research centres	X	X		X	X							X	
3 (SGIT)	Improve the provision and supply of traffic data	X	X		X		X					X	X	
4 (SGIT)	Take part in European projects and other forums related to mobility of the future								X	X	X			X
5 (INFR)	Deploy new ITS equipment in the Catalan road network	X			X	X						X	X	
6 (INFR)	Renew the Data Processing Centre (DPC) and the redundancy of CIVICAT					X						X		
7 (INFR)	Conduct an audit of the ITS equipment support structures of the Catalan Traffic Service				X							X		
8 (INFR)	Perform maintenance on ITS equipment on the road				X	X						X		
9 (MGT)	Set out special road traffic, planning and regulation measures to improve road safety and increase flow capacity				X	X		X				X		
10 (MGT)	Operate with the SCT's aircraft assets	X	X		X	X						X		
11 (MGT)	Inform, create protocols and operating procedures	X	X		X	X						X	X	
12 (SSV)	Deploy, test and trial autonomous vehicles and connected vehicles								X	X		X		X
13 (SSV)	Improve information on adverse weather conditions	X			X							X		
14 (SSV)	Increase the number of flowmeters throughout Catalonia	X	X	X								X		
15 (PREM)	Improve the dissemination of information on social media	X	X									X		

These fifteen rows summarise the forty-two objectives set out in the Actions contained in this Plan. New charts were created for each of them for the purpose of breaking them down into greater detail; these were included as the Annex to the Comprehensive ITS Plan 2021–2023. The 'X' indicates areas of action with greater relevance, while an 'x' indicates less relevance, in the same way as each of the different coloured charts. Each horizontal block corresponds to one of the following services and sub-directorates belonging to the SCT: Traffic Management and Information Service (SGIT); Traffic Infrastructure Planning and Execution Service (INFR); Traffic Management Measures (MGT); Road Safety Sub-Directorate General (SSV); Press Office (PREM).