Fundación
ALEATICA

Road Safety Monitor

An X-ray of the situation in Mexico towards 2030.

DECENIO DE ACCIÓN POR LA
SEGURIDAD VIAL
2021 - 2030

Index

1

Road safety, why is it important? Global impacts. Goals of the Second Decade of Action for Road Safety 2021-2030 How are we doing?

According to the World Health Organization (WHO)[1], road traffic injuries are the twelfth leading cause of death worldwide, resulting in the loss of more than 1.19 million lives each year. They cause non-fatal injuries, and it is estimated that nearly 50 million people are injured, many of them resulting in disability.

53% of people killed on the world's roads are pedestrians, cyclists, motorcyclists and micro-mobility users. In addition, road traffic fatalities are the leading cause of death for people aged 15-29.[3] The global economic costs of road traffic fatalities amount to 3% of the world's Gross Domestic Product.

In the case of Mexico, traffic accidents result in the loss of the lives of 43 Mexicans every day on the country's streets and highways. In addition, on average every year, 100,000 are slightly injured and 33,500 are seriously injured[5] as a result of around 370,000 traffic incidents9.

Mexico ranks ninth in the world and third in the Americas.[7] It is estimated that the social and economic costs of road accidents imposed on victims, their families and the country amount to at least 174 to 204 billion pesos a year.[8] To address this major problem, the Mexican Federal Government, through the Ministry of Communications and Transport and the Ministry of Health, published the Agreement announcing the National Road Safety Strategy 2011- 2020.[a] With this, the country pledged to reduce the number of road traffic fatalities projected for 2020 by 50%, as well as to reduce injuries and disabilities associated with this public health problem as much as possible .[10]

1. Global status report on road safety 2023. Geneva: World Health Organization; 2023.
2. Global status report on road safety 2023. Geneva: World Health Organization; 2023.
3. Global status report on road safety 2023. Geneva: World Health Organization; 2023.
4. Global status report on road safety 2018. Geneva: World Health Organization; 2018. Licence: CC BYNC-SA 3.0 IGO.
6. Calculation based on data published by INEGI in the base of Accidentes de tránsito en zonas urbanas y suburbanas 2015-2022 and Anuario estadístico de colisiones en carreteras federales 2022 (Instituto Mexicano del Transporte, 2022).
7. Calculation based on Global status report on road safety 2023. Geneva: World Health Organization; 2023.
8. Mexican Transport Institute (2021). Anuario estadístico de colisiones en carreteras federales 2021. Available at: https://imt.mx/archivos/Publicaciones/DocumentoTecnico/dt85.pdf.
9. Híjar, Martha (2018). Progress in Mexico at the midpoint of the Decade of Action for Road Safety 2011-2020. Revista Salud Pública 52 (5). Available at https://www.scielosp.org/article/rsp/2018.v52/67/es/
10. Híjar, Martha (2018). Progress in Mexico at the midpoint of the Decade of Action for Road Safety 2011-2020. Revista Salud Pública 52 (5). Available at https://www.scielosp.org/article/rsp/2018.v52/67/es/

Furthermore, in 2022 the new General Law on Mobility and Road Safety came into force, which created the National Mobility and Road Safety System (SNMySV), and in October 2023 the National Mobility and Road Safety Strategy 2023-2042. to guarantee the constitutional right to mobility with road safety, accessibility, efficiency, quality, sustainability and equality.

As can be seen, road traffic injuries are a serious public health and development problem, with high health and socio-economic costs for all countries.

For this reason, more than a decade ago, the United Nations (UN) declared 2011-2020 as the Decade of Action for Road Safety. In this proclamation, it encouraged countries to join this global initiative to address the significant burden of road traffic injuries in the world.

The Global Plan for the Decade of Action for Road Safety 2011-2020 highlighted the importance of adopting a comprehensive approach to road safety and constantly improving the design of cities, roads and vehicles. As well as improving transport policy, enforcement and the design of streets that

10. WHO (2018). Global status report on road safety 2018. Available at: https://www.who.int/publications/i/item/9789241565684.
11.WHO (2018). Global status report on road safety 2018. Available at: https://www.who.int/publications/i/item/9789241565684.

Having failed to meet the target of halving the number of fatalities in the first Decade of Action in 2020, Mexico joined the Second Decade of Action for Road Safety 2021-2030, which was launched in October 2021 with the ambitious objective of preventing at least 50% of road traffic fatalities and injuries by 2030.[12]

Through these actions, Mexico is poised to make the Second Decade of Action for Road Safety a reality. However, as the reader will see through the analysis of this document, Mexico faces a challenge in meeting these goals, among which is the urgent need to protect vulnerable road users (pedestrians, cyclists and motorcyclists), who account for 70% of fatalities nationwide[12]. Fatalities involving such vulnerable road users occur mainly in cities.

Mexico faces a challenge in meeting these goals, including the urgent need to protect vulnerable road users (pedestrians, cyclists and motorcyclists), who account for 70 % of fatalities nationwide. Fatalities involving such vulnerable road users occur mainly in cities.

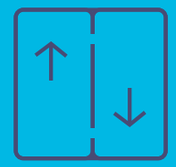
11. United Nations General Assembly. A/RES/74/299. Improving Global Road Safety. Resolution adopted on 31 August 2020. https://undocs.org/es/A/RES/74/299.
12. ANASEVI, 2024 with data from the Death Database published by INEGI, 2022.

For this reason, the Aleatica Foundation for Road Safety seeks to be part of the solution, providing information that allows us to analyse the challenges and seek policies and strategies that address this problem, hand in hand with all the actors involved. The Foundation has joined the Second Decade of Action for Road Safety and has incorporated the Safe System Approach with the objective of reducing road traffic deaths and injuries by at least 50% in order to contribute to t h e achievement of the United Nations Sustainable Development Goals, mainly target 3.6 "Reduce road traffic fatalities and injuries.

The Safe System Approach is recognised by international organisations and defines that humans, vehicles and road infrastructure should interact in a way that ensures a high level of safety. In other words, it states that all actors involved in mobility are jointly responsible for creating conditions for road safety.

13. IBID.

The main lines of action of the Aleatica Foundation for Road Safety are centred on three fundamental strategic guidelines:



Safe infrastructure: Work with leading international standards and norms to minimise infrastructure-related risk on high-performance roads.

Safe vehicles: Promote and support best practices and global standards for safer vehicles to help prevent road accidents and protect road users in the event of accidents.

Safe mobility users: Inform as well as raise awareness to reduce high-risk behaviours and comply with established rules.

2

Numbers count. The Aleatica Foundation's Road Safety Monitor is born. Basic statistical analysis for public policies and prevention.

At Aleatica Road Safety Foundation, we strongly believe that in order to successfully address this challenge, it is essential to have accurate and reliable data that provides a complete understanding of the current situation and allows for informed decision making. With this in mind, we decided to produce the **Road Safety Monitor: a snapshot of the situation in Mexico towards 2030.**

This initiative aims to be an instrument that serves as a complete x-ray whose image allows us to understand the current situation with the official data available. It also a ims t o move towards the establishment, through partnerships with diverse stakeholders, of a comprehensive and sustainable road safety system in Mexico, using the generation of accurate information, reliable data analysis, and communication and dissemination as key tools, eventually serving as a solid foundation for evidence-based policy formulation and interventions, public awareness raising and promotion of the "Safe System" concept, aligned with the 2030 Sustainable Development Goals and the targets of the Second Decade of Action for Road Safety.

The Road Safety Monitor is based on the creation of the National Road Safety Profile organised according to the Strategic Axes (infrastructure, vehicles and users) to see the overall picture accompanied by a geographical analysis. All the information included in this analysis corresponds to the latest available data from 2022 in various official and public databases, including those generated by the Ministry of Infrastructure, Communications and Transport (SICT), the National Institute of Statistics and Geography (INEGI), the General Directorate of Health Information of the Ministry of Health, Population Projections of the National Population Council, the Mexican Institute of Transport and National Guard. [14]

14. For more information, see section 6, Methodological Note, of this Road Safety Monitor.

The collaboration of researchers, geographers, analysts, editors and designers has made it possible to carry out a comprehensive analysis of statistical data related to traffic events. Thanks to this diversity of talents and expertise, we were able not only to collect and process a large amount of information, but also to translate it into clear and understandable maps for the general public. The mapping generated by this team has contributed significantly to identifying patterns and critical areas in terms of road safety, which in turn facilitates informed decisionmaking to improve infrastructure and promote safer behaviour on our streets and roads.

This document includes an analysis of the evolution of the Second Decade and even retrospectively to previous years, the total number of deaths, minor injuries, serious injuries, traffic events in urban areas and on federal highways, deaths by type of user and with special emphasis on what the Hierarchy of Mobility Pyramid establishes in terms of the vulnerability of users: pedestrians, cyclists and motorcyclists; vehicle occupants, occupants of freight vehicles and occupants of passenger transport vehicles; fatality, lethality, accident and motorisation rates.

It is worth mentioning that in addition to this data, the Road Safety Monitor has spatial-analytical mapping where information is visually described on the fatality rate by type of road user and the identification of the most dangerous roads in each state.

3

They increase the serious injuries and the motorbike accidents.

According to data from the Road Safety Monitor, in 2021 the downward trend in mortality, morbidity and road traffic fatalities was reversed. This is because **injuries and fatalities increased considerably, particularly among motorcyclists, where the upward trend has been sustained for at least the last 20 years.**

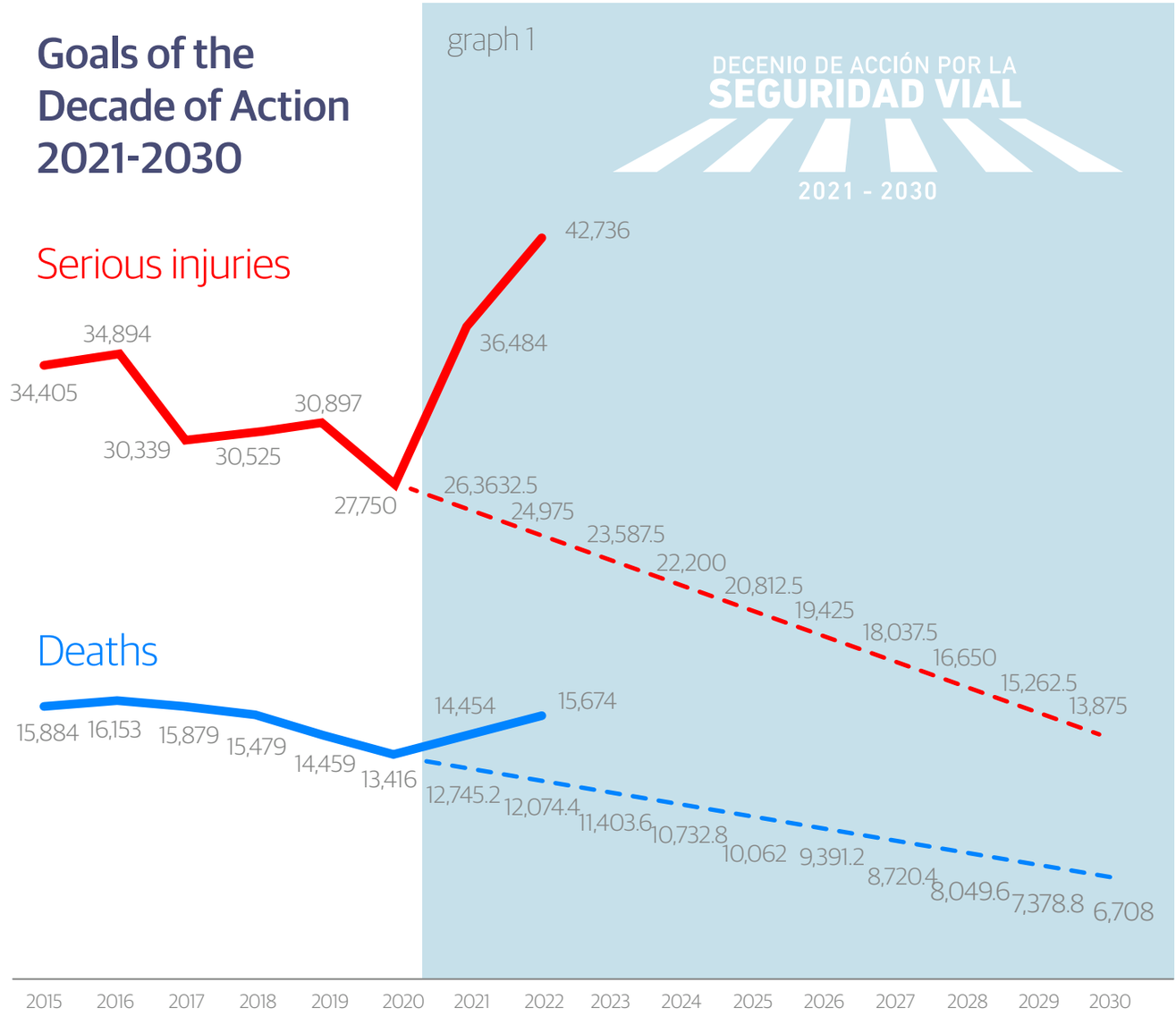
The number of serious injuries generated post-pandemic increased by 30.8%, from 36,484 in 2021 to 42,736 in 2022, an increase of 6,252. On the other hand, the number of fatalities at the national level increased from 14,454 in 2021 to 15,674 in 2022, returning to its pre-pandemic trend (see graph 1).

Based on the above, we can infer that the slightly downward trend of previous years will reverse in 2021 and continue in 2022. It is therefore necessary, in order to achieve the goals of the Second Decade of Action for Road Safety 2021-2030, to generate better and different strategies, working with all sectors to achieve a road safety agenda.

On the other hand, if we analyse the above graph more precisely, we can see that in order to achieve the goal of reducing the number of fatalities and injuries by 50% by 2030, during 2022, we should have had **12,074 fatalities, however, 15,674 were recorded, which represents a difference of 3,600 people more than projected; in other words, 29.8% more than expected.**

graph 1

Goals of the Decade of Action 2021-2030



Graph 1, prepared by Alianza Nacional por la Seguridad Vial, (ANASEVI) 2023.

Another piece of data from the **Road Safety Monito**r is that on average 15,674 fatalities, 98,748 injuries and 391,298 crashes are recorded each year in Mexico, both on federal highways and in urban and suburban areas. This means that **by the year 2022 in table 1 Comparison 2022 vs 2021 compared to 2021, it had 8.4% more deaths, 9.0% more injuries and 10.1% more road accidents** (see table 1).

It is worth noting that the mortality rate was 12.0 per 100,000 inhabitants, the fatality rate was 40.1 per 1,000 accidents, the accident rate was 7.1 per 1,000 vehicles and the motorisation rate was 424 per 1,000 inhabitants. This This allows comparison between countries, states, municipalities, etc. because it calculates the risk to the population regardless of the number of inhabitants and/or vehicles. In this case, what is valuable to know is that in Mexico the risk is 12.0, but when disaggregated at the state level, there are states with much higher rates and others with very low rates, which represents the diversity of scenarios in the country.

Lethality means that for every 1,000 traffic events there will be 40.1 fatalities; accident rate means that for every 1,000 vehicles there are 7.1 crashes; and that for every 1,000 Mexicans there are 424 vehicles on the road. This explains that there are many vehicles that run over pedestrians, cyclists and motorcyclists, which is the reality of the country. And speed is the main risk factor (see table 2). For example, Mexico's road traffic fatality rate of 12.0 shows a different situation ompared to other countries. Norway, with a rate of 2.0, and countries such as the United Kingdom (2.0), Spain (4.0), Australia (5.0), and Italy (5.0), have significantly lower rates.

This disparity highlights the need to strengthen evidence-based actions with a comprehensive approach to road safety in Mexico, including preventive measures, improvements in road infrastructure and a greater emphasis on driver education and awareness

table 1

Comparison 2022 vs 2021

15,674 deaths	⌃⌃	8.4% more deaths vs 2021
98,748 injured	⌃⌃	9.0% more injured vs 2021
391,298 claims	⌃⌃	10.1% more claims vs 2021

(Table 1, prepared by ANASEVI, 2023)..

Table 2

Fees

Mortality: 12.0 per 100,000 inhabitants
Lethality: 40.1 per 1,000 casualties
Accident rate: 7.1 per 1000 vehicles
Motorisation: 424 per 1,000 inhabitants

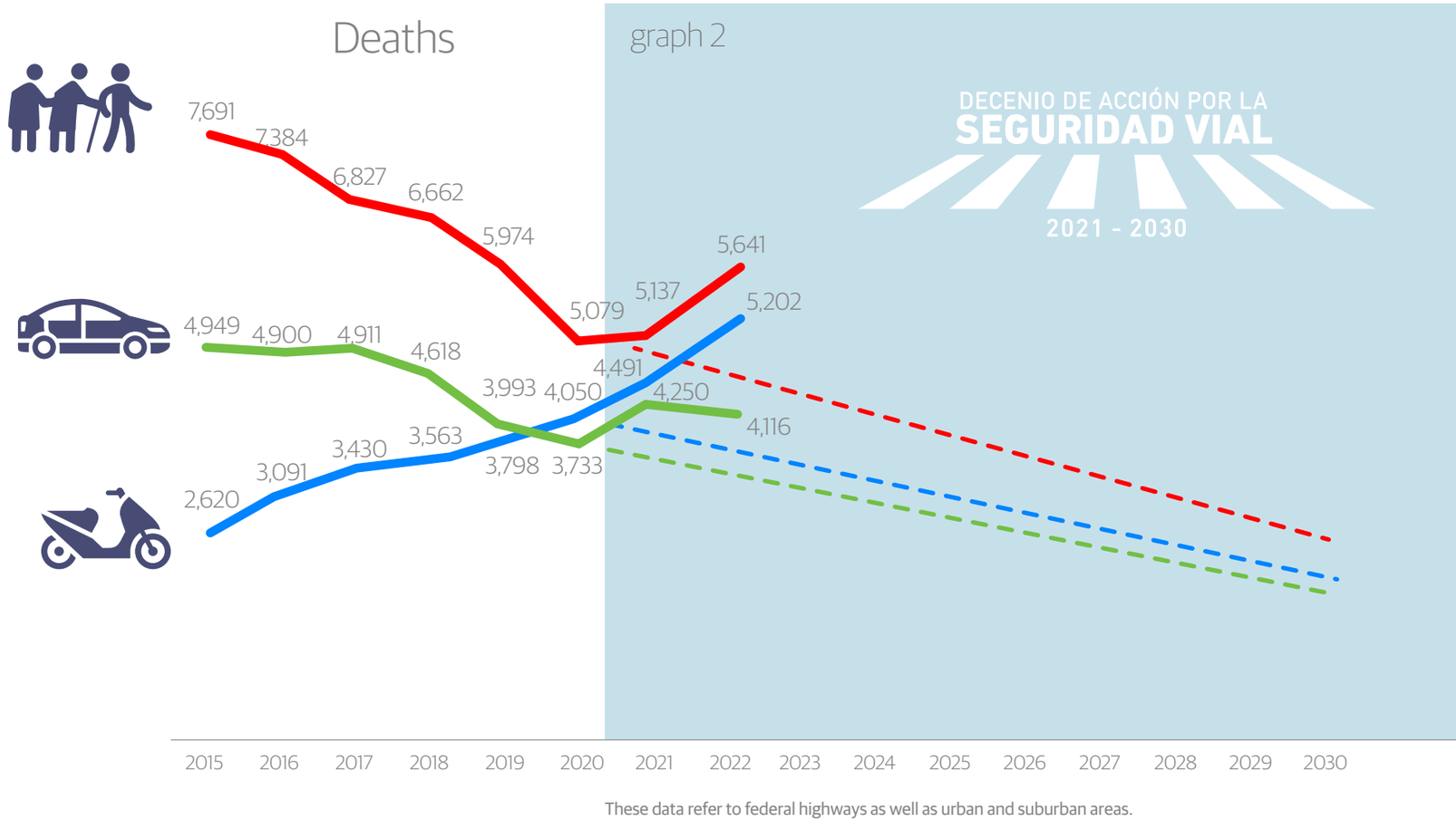
(Tabla 2, elaborada por ANASEVI, 2023).

a

Motorcyclists as the most affected users

Fatal injuries among motorcyclists increased by 98.5% in the last six years and are expected to continue to grow (see graph 2)

Evolution and Goals of the Decade of Action 2021-2030



These data refer to federal highways as well as urban and suburban areas.

It is worth noting that on 24 September 2023, in Mexico City, the modifications made to the traffic regulations in relation to motorcyclists came into force. According to the Ministry of Mobility (SEMOVI), the aim of this initiative was to reduce road accidents and to adapt to an environment in which avenues are no longer exclusively for cars, but for motorbikes, cyclists and confined lanes for public transport.

In addition, the new regulation stiffens the penalties for motorcyclists who commit any of the following offences: transporting children under 12 years of age, not wearing a helmet during their journeys, transporting more people than allowed on a motorbike, driving without a valid licence and riding without number plates. In addition, it obliges motorcyclists to ride at all times with front and rear lights on, to use reflective strips or luminous attachments at night and, preferably, to carry visors, jackets, bibs and other protective accessories specially designed for motorcycling.

The document states the following:

"The use of protective helmets with the required safety specifications for these vehicles is mandatory: having a rigid barrier frame that provides greater protection; cushioning padding 3 to 4 centimetres thick to absorb impacts; comfort padding that helps the helmet to fit correctly on the head; a retention system that keeps the helmet on the head during a collision, where due to the action of inertia the helmet tends to slip out of place, consisting of straps, anchorages and closing or fastening mechanism; and visor that guarantees correct visibili- ty and resistance to the impact of objects." (Government of Mexico City (2023).[15]

15. Government of Mexico City (2023) "Public Government of Mexico City Reforms to the Traffic Regulation with the aim of saving lives".
Available at: https://jefaturadegobierno.cdmx.gob.mx/comunicacion/nota/publica-gobierno-de-la-ciudad-de-mexico-rerformas-al-reglamento-de-transito-con-el-objetivo-de-salvar-vidas

However, when analysing data from this **Road Safety Monitor,** currently seven out of every 10 fatalities in Mexico correspond to motorcyclists (33.2%) and almost 36% are pedestrians. The explanation for this phenomenon is due, among other variables, to the fact that in 2022 there was a 158% increase in the number of motorbikes in circulation in relation to those circulating in 2015. (see table 3)

Table 3

Road accidents and vehicle fleet

55.1 million vehicles on the road

158%
more motorbikes on the road vs 2015

35.6%
more cars on the road vs 2015

61% of collisions occur in urban and suburban areas between private vehicles and 14.2% with motorbikes.

391,298 road casualties in 2022

*In urban and suburban areas as well as on federal highways.

2%
less compared to 2015

19.5% on federal roads and

3.4% in urban areas is attributed to mechanical, environmental or pavement causes.

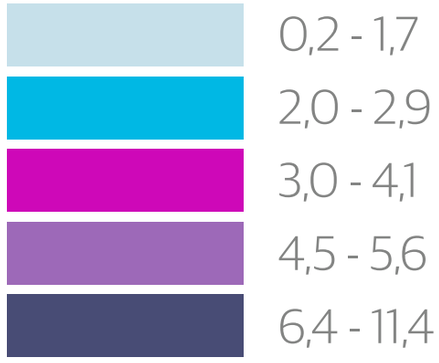
51% of all traffic accidents are concentrated in seven states: Nuevo León, Sonora, Chihuahua, State of Mexico, Michoacán, Guanajuato and Tamaulipas.

(Table 3, prepared by ANASEVI, 2023).

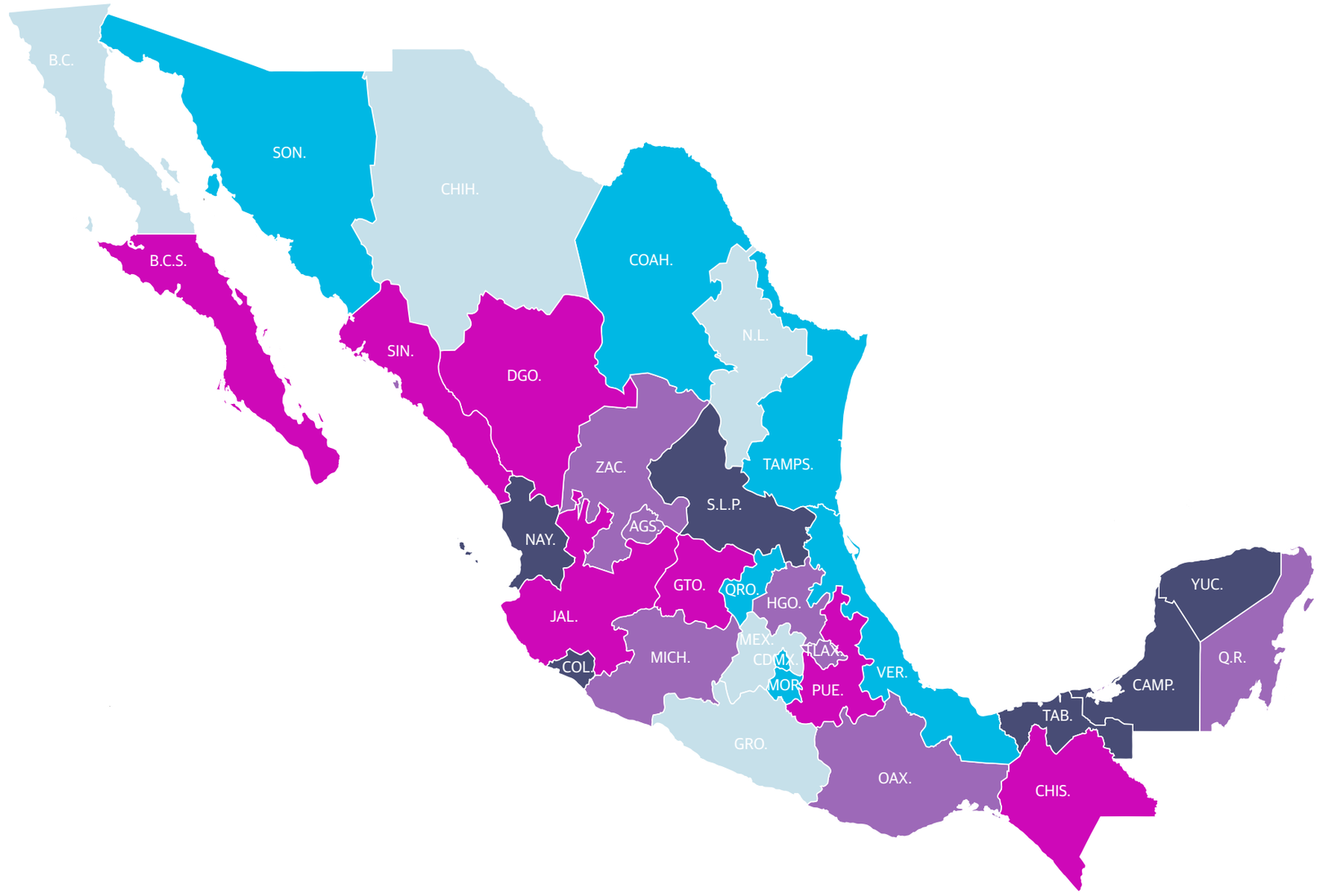
In addition to the above, it is important to note that the states with the highest motorcyclist fatality rates in 2022 are: Colima, Tabasco, Campeche, Nayarit and Yucatán. (See map 1).

map 1

Motorcyclist fatality rate 2022



0,2 - 1,7
2,0 - 2,9
3,0 - 4,1
4,5 - 5,6
6,4 - 11,4



Map prepared by ANASEVI, 2023).

4

Traffic accidents. Cities vs. roads.

With respect to the findings, it is important to point out that there is a big difference between traffic incidents occurring in urban and suburban areas and those occurring on Mexico's roads. According to the data obtained in 2022, a total of 377,231 traffic incidents were identified in urban and suburban areas, while only 14,067 occurred on roads (see table 4).

In terms of road accidents, an upward trend was identified. Of the 391,298 recorded in 2021, there was an increase of 10.1% compared to 2015. Also, 61.7% of the crashes involved private vehicles and 14.2% involved motorcyclists.

Table 4

Traffic incidents

In urban areas: 377,231
On roads: 14,067
Total: 391,298

(Tabla 4, elaborada por ANASEVI, 2023).

It is worth noting that 50.9% of all traffic accidents* are concentrated in just seven states: Nuevo León, Sonora, Chihuahua, State of Mexico, Michoacán, Guanajuato and Tamaulipas. In addition, the research indicates that 95.5% of the causes in urban and suburban areas and 78.2% on federal highways are related to risky behaviour (see table 3 and 4).

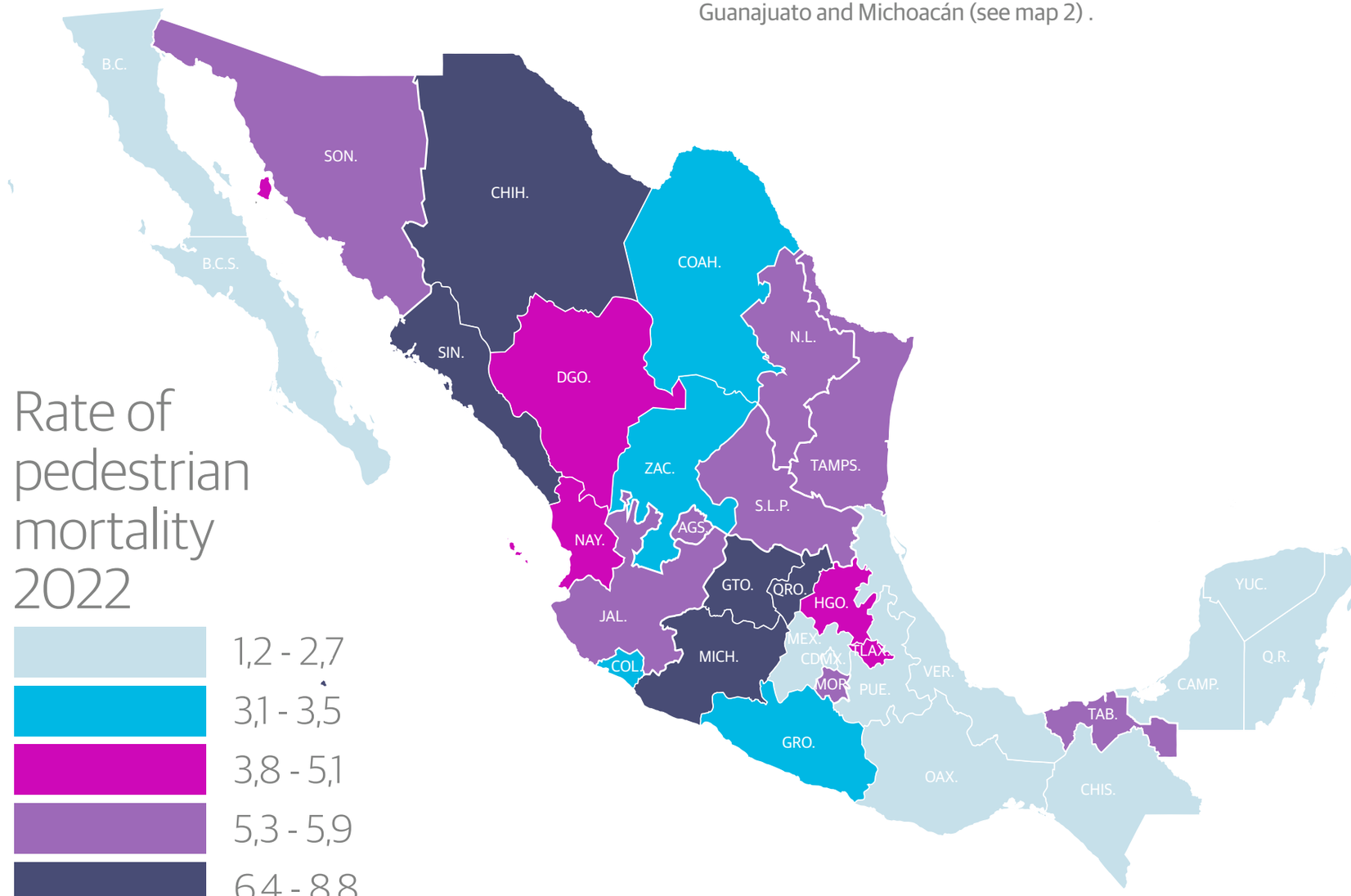
*In urban and suburban areas as well as on federal highways.

a

Reality (streets and roads).

Within the Mexican Republic, the states with the highest pedestrian mortality rates are Sinaloa, Querétaro, Chihuahua, Guanajuato and Michoacán (see map 2) .

mapa 2



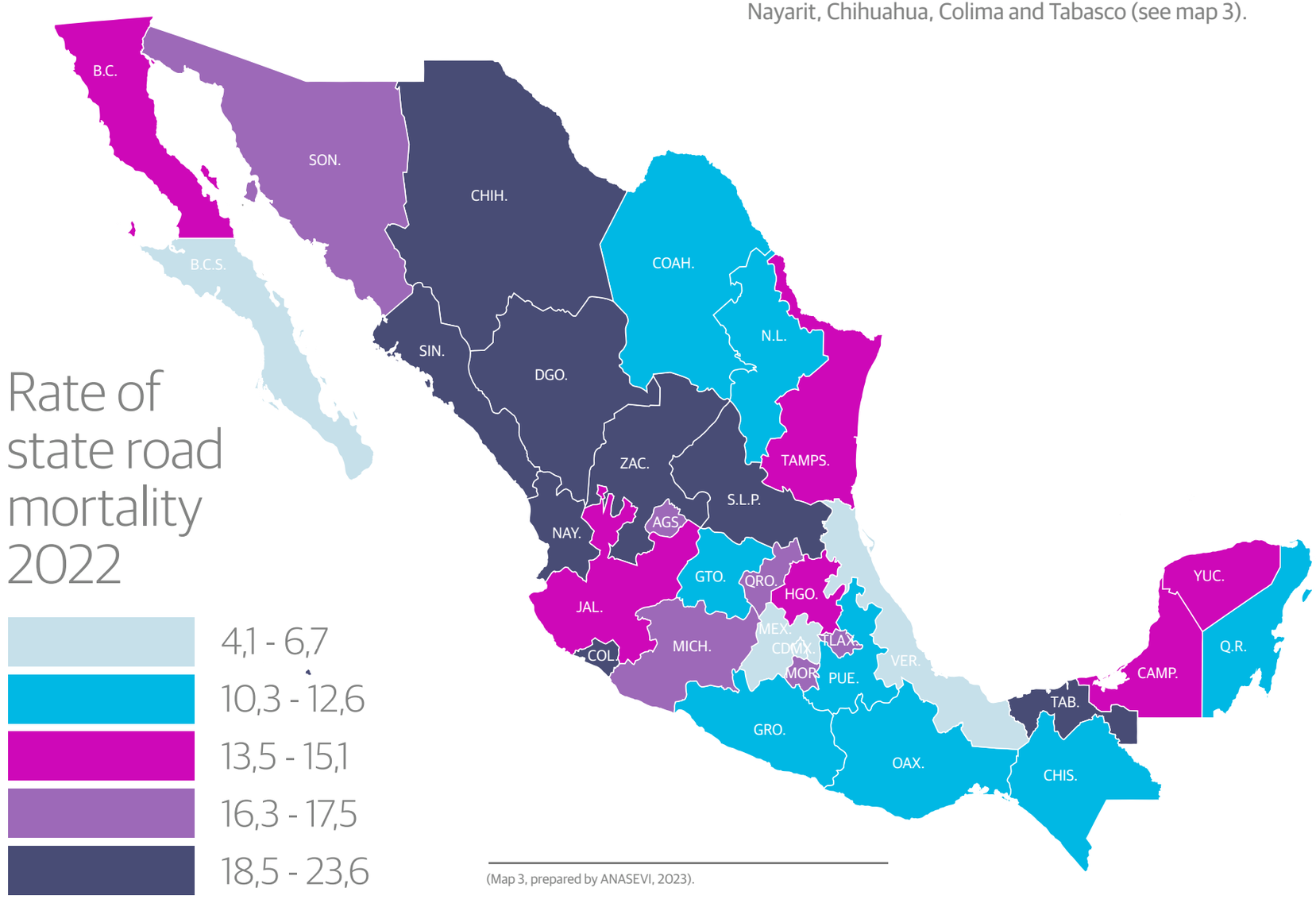
Map 2, prepared by ANASEVI, 2023).

a

Reality (streets and roads).

On the other hand, the states with the highest mortality rates (all users) in 2022 are; Zacatecas, Nayarit, Chihuahua, Colima and Tabasco (see map 3).

mapa 3



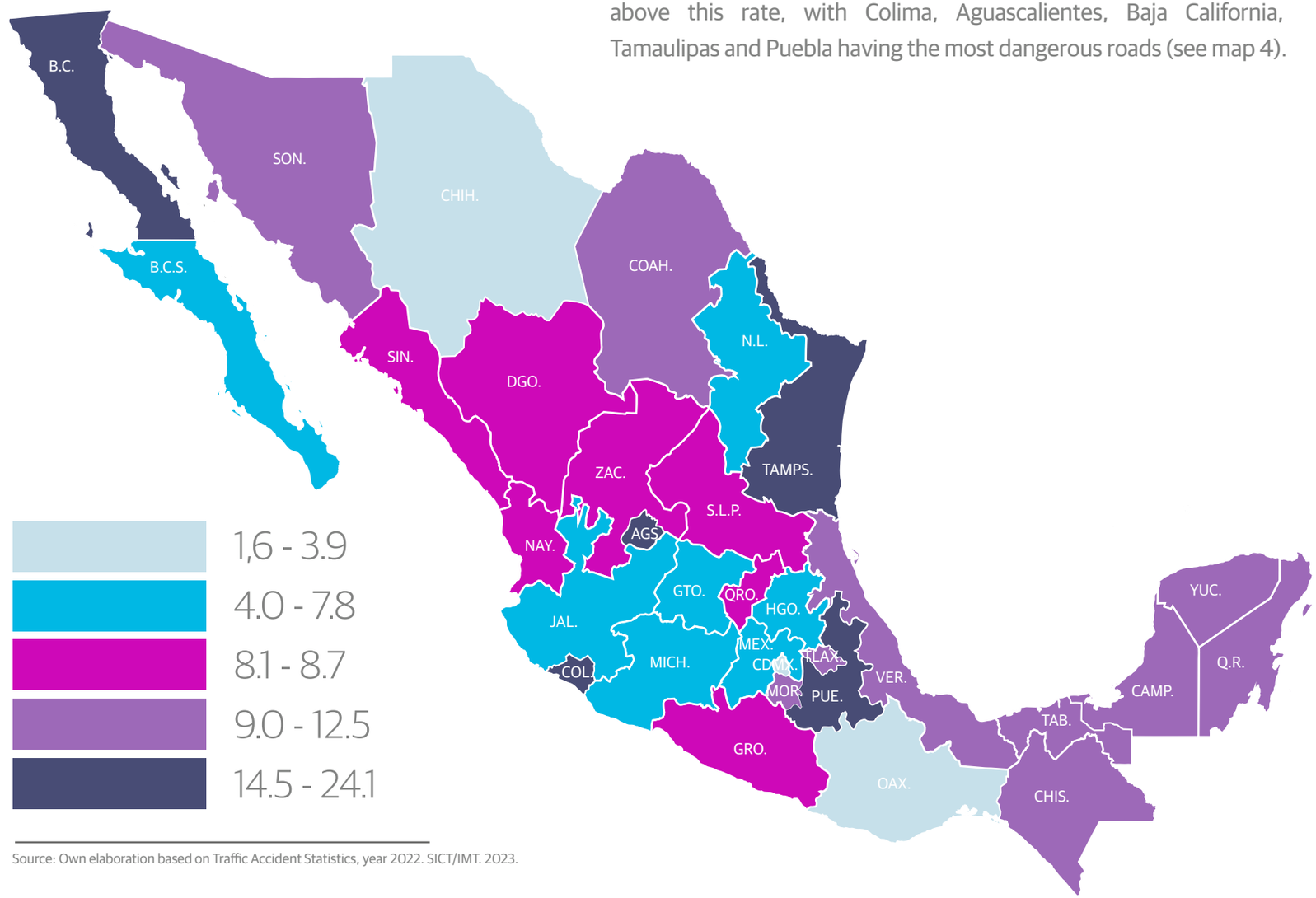
(Map 3, prepared by ANASEVI, 2023).

b

Situation on roads.

In Mexico, the accident rate or accident rate (road accidents per 100 million kilometres travelled) is estimated at 8.5. There are 17 states above this rate, with Colima, Aguascalientes, Baja California, Tamaulipas and Puebla having the most dangerous roads (see map 4).

map 4



Source: Own elaboration based on Traffic Accident Statistics, year 2022. SICT/IMT. 2023.

b

Situation on roads.

The states with the highest accident rates are Colima 24.1, Aguascalientes 23.4, Baja California 16.6, Tamaulipas 14.8, and Puebla 14.5 (see table 5).

Table 5

Ranking of the states with the most dangerous roads

State	Accident rate	State	Accident rate
1. Colima	24.1	17. Sinaloa	8.6
2. Aguascalientes	23.4	18. Warrior	8.5
3. Baja California	16.6	19. Zacatecas	8.4
4. Tamaulipas	14.8	20. Nayarit	8.3
5. Puebla	14.5	21. Querétaro	8.3
6. Morelos	12.5	22. Durango	8.1
7. Chiapas	12.2	23. Baja California Sur	7.8
8. Tlaxcala	11.9	24. Nuevo León	6.7
9. Campeche	11.3	25. Guanajuato	6.2
10. Veracruz	11.1	26. Hidalgo	5.8
11. Tabasco	10.9	27. Michoacán	4.9
12. Quintana Roo	9.9	28. Estado de México	4.5
13. Yucatán	9.7	29. Jalisco	4.0
14. Sonora	9.3	30. Chihuahua	3.9
15. Coahuila	9.0	31. Oaxaca	3.0
16. San Luis Potosí	8.7	32. Ciudad de México	1.6

Source: Traffic accident statistics, year 2022. SICT/IMT. 2023.

b

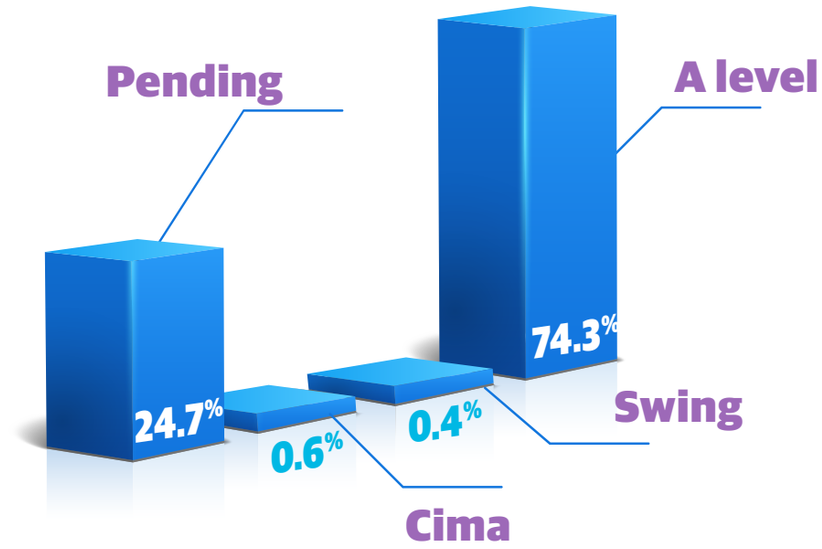
Situation on roads.

78.2 % of traffic incidents occurring on federal highways are due to risky behaviour among drivers of vehicles. 9.6 % as a result of vehicle-related defects. 6.7% to road conditions (infrastructure) and 5.0% to natural or environmental causes.

In addition, 24.7% of road traffic incidents occurred on a slope, while 74.3% occurred on level ground, suggesting that speeding and overloading in transport are elements of risk that need to be taken seriously (see graph 3).

graph 3

Occurrence of traffic events and vertical road alignment



Source: Own elaboration based on data from Traffic Accident Statistics, year 2022.SICT/IMT. 2023.

b

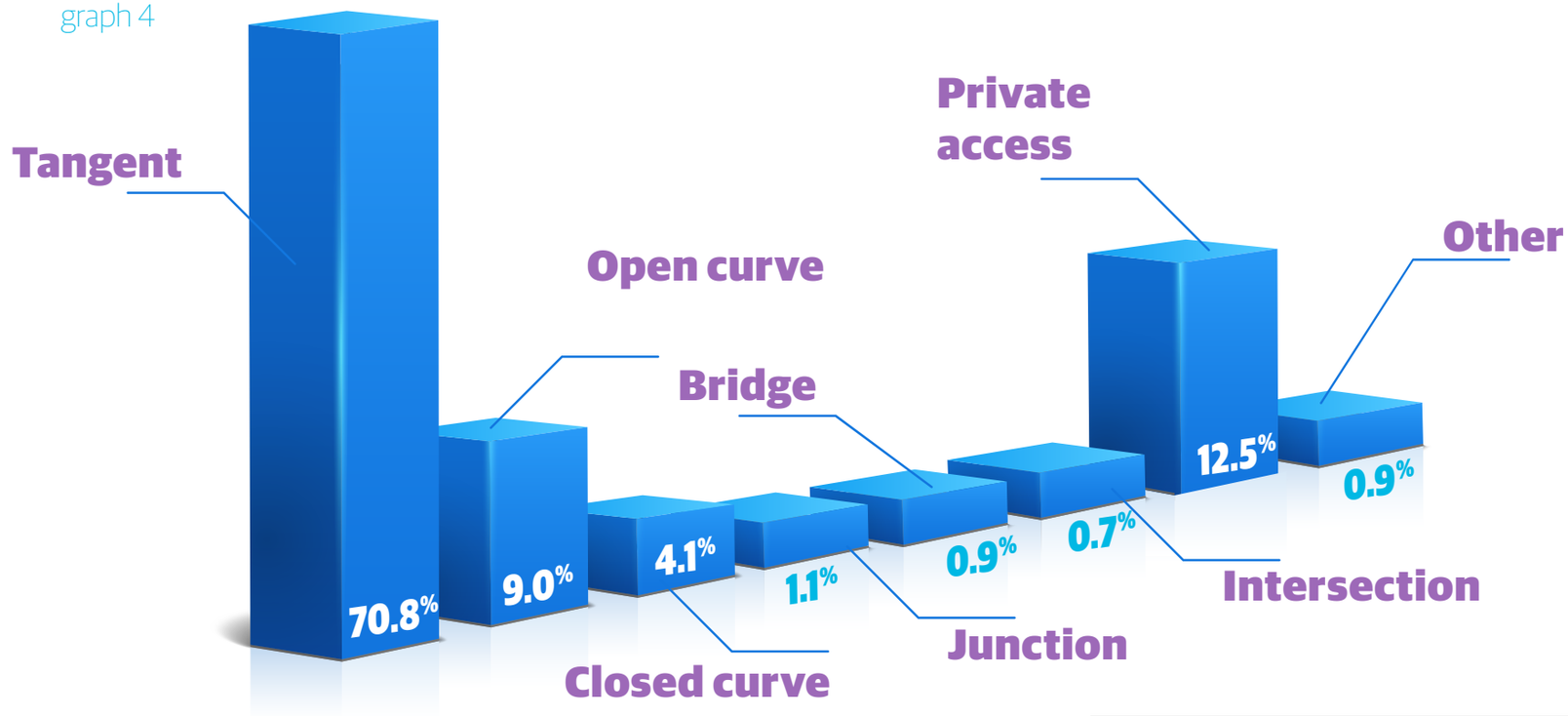
Situation on roads.

Seven out of 10 traffic incidents occur on straight roads (tangents) and 13.1% on curves, either sharp or open.

44.4% were due to wet pavement and 21.2% to slippery pavement. 11.8 % were caused by objects on the road and 6.3 % by vehicles entering the road. Lack of signs and damage contributed 6.3% and 3.5% respectively.

Infrastructural factors causing road traffic events

graph 4



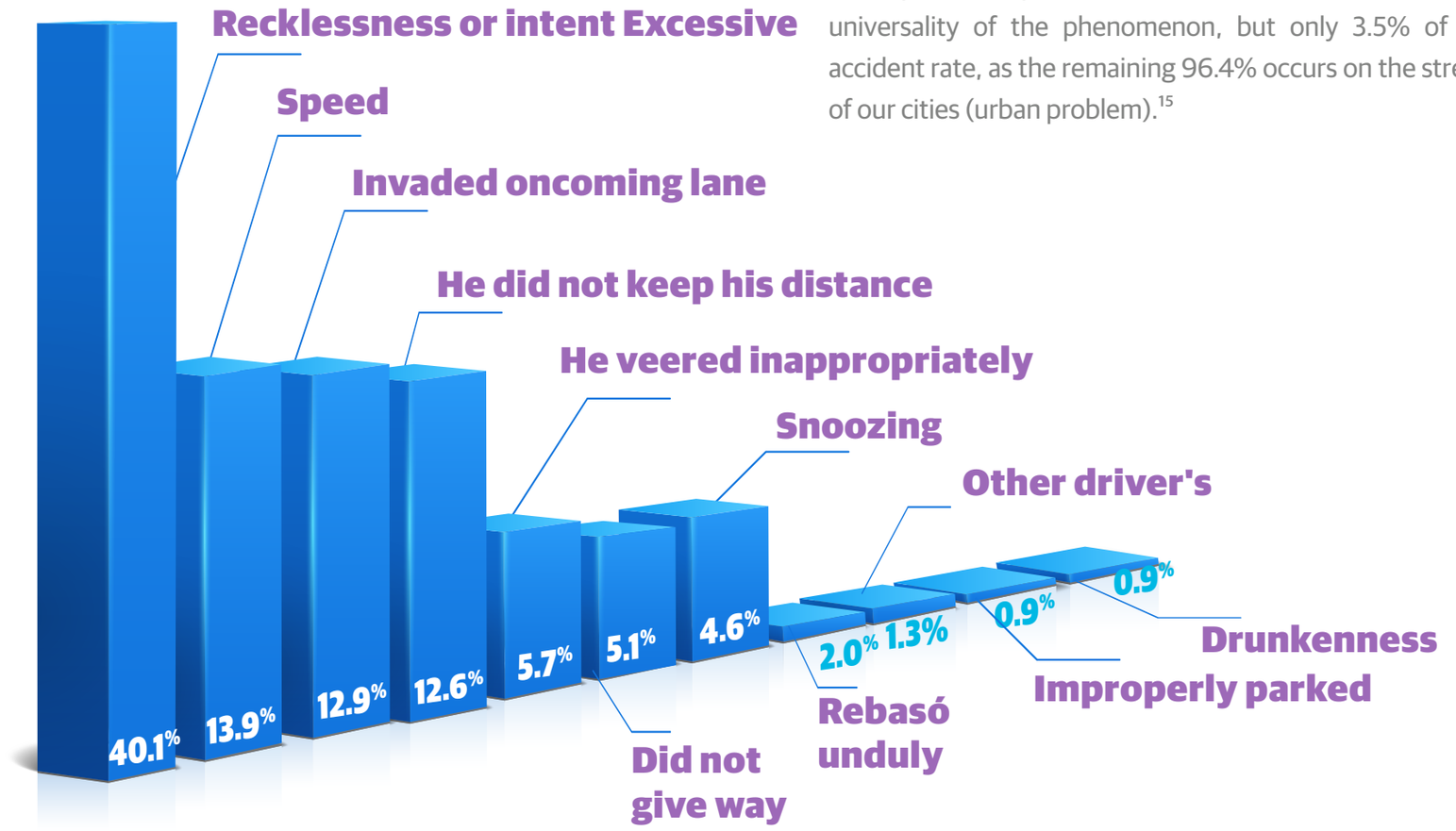
Source: Own elaboration based on Traffic Accident Statistics, year 2022. SICT/IMT. 2023.

b

Situation on roads

Risky behaviours leading to events traffic accidents on the roads

graph 5



Source: Own elaboration based on Traffic Accident Statistics, year 2022. SICT/IMT. 2023.

Among the risky behaviours causing road traffic accidents, those classified as "reckless or intentional" are the highest with 40.1%. Excessive speed (13.8%), lane drift (12.9%) and failure to keep a safe distance (12.6%) were also the most frequent causes (see graph 5).

It is important to point out that these data do not reflect the universality of the phenomenon, but only 3.5% of the accident rate, as the remaining 96.4% occurs on the streets of our cities (urban problem).[15]

5 Conclusions

The Aleatica Road Safety Foundation seeks to promote the right to safe mobility for all people. Traffic accidents represent a significant economic and social cost for families, government and businesses. In this way, by generating knowledge and disseminating related information, the Aleatica Foundation seeks to contribute to saving lives, preventing traffic accidents, as well as developing smart, safe and sustainable mobility for people.

In this sense, **the creation of the Road Safety Monitor represents an effort to achieve evidence-based decision-making through data analysis. It is intended as a tool to understand Mexico's current road safety situation.**

For example, this analysis provides data that identifies that **the phenomenon of road insecurity is focused on certain states, municipalities, streets and intersections;** therefore, the value of this spatial analysis allows targeting and making timely and strategic interventions, in order to make technical and financial resources more efficient.

In order to develop a cultural change in the road safety system, it is necessary to have a comprehensive and multi-sectoral approach. And to achieve this, the Aleatica Road Safety Foundation has set out to be a bridge between the public, private and social sectors, to join forces, understanding that it is a shared responsibility: road safety is all of us.

There are several examples of success stories around the world where effective strategies and measures have been implemented to improve road safety.

1. **Sweden and the "Vision Zero" approach:** Sweden is widely recognised for its "Vision Zero" approach, which aims to reduce fatalities and serious injuries on roads and highways altogether. This approach is based on the principle that human error should not result in fatalities (Safe System Approach). Sweden has implemented a number of measures, such as reduced speed limits, safer road design and awareness campaigns, which have led to a significant decrease in fatality and serious injury rates.
2. **New York and the "Vision Zero" programme:** The City of New York launched its programme with the goal of reducing traffic fatalities to zero. This programme includes measures such as reduced speed limits, expansion of bicycle lanes, improvements to road infrastructure and increased enforcement of traffic laws. Since its inception, New York has seen a decrease in traffic-related fatalities.
3. **United Kingdom and the reduction of speed limits:** The United Kingdom has been a pioneer in reducing speed limits in urban areas. The implementation of lower speed limits in these areas has led to a decrease in the severity of road crashes and improved the safety of pedestrians and cyclists (vulnerable road users).
4. **The Netherlands and cycleway planning:** The Netherlands is known for its focus on safe and efficient cycleway planning. The design of road infrastructure that effectively separates cyclists from motorised vehicles has contributed to making cycling a safe and popular transport option.
5. **Australia and the implementation of child restraint systems:** Australia has achieved significant reductions in child fatalities in motor vehicle crashes through the promotion of appropriate child restraint systems and awareness campaigns for parents.

These success stories should serve as examples to follow in order to protect vulnerable users, as outlined in the Mobility Hierarchy Pyramid, prioritising pedestrians (especially people with disabilities, children, the elderly), cyclists, public transport users, freight transport and finally cars and motorbikes.

We believe that Mexico is on the way to becoming a success story and proof of this is the new motorcyclist regulation initiative in Mexico City and the "Estrate- gia Nacional de Movilidad y Seguridad Vial 2023 - 2042" (ENAMOV), which highlights its guiding sense, its country-wide approach, as well as the importance of positioning road safety as a priority in mobility issues.

Only by working hand in hand with institutions, government, civil society organisations, and national and international institutions, can we build a future in which everyone can embark on their journey with the certainty of reaching their destination safely.

6

Methodological note

For the integration of the information in this document, available and published official databases were used for the period from 2015 to 2022, the latter being the most recent year.

For the calculation of mortality the International Classification of Diseases 10th Edition (ICD-10) has been used using the following codes: V02, V03, V04, V09, V12, V13, V14, V19, V20, V21, V22, V23, V24, V25, V26, V27, V28, V29, V31, V32, V33, V34, V37, V38, V39, V40, V41, V42, V43, V44, V45, V46, V47, V48, V49, V50, V52, V53, V54, V55, V56, V57, V58, V59, V60, V63, V64, V65, V66, V67, V68, V69, V70, V72, V73, V74, V75, V76, V77, V78, V79, V80, V81, V82, V83, V84, V85, V86, V87, V89 and Y85.

A proportional redistribution of codes recorded as "other" and "unspecified" was made to type of users: pedestrians, cyclists, motorcyclists, vehicle occupants, bus occupants and freight vehicle occupants.

The tables and graphs have been drawn up based on the use of the above-mentioned sources. The projection of the targets to 2030 were elaborated considering a 50% reduction of the absolute number based on the year 2020, establishing a linear trend.

The number of road crashes was calculated taking into consideration the sum reported by INEGI and SICT.

The number of seriously injured was calculated from the base of hospital admissions under the criterion of persons requiring hospital care based on ICD-10 codes.

The number of minor injuries was calculated by adding the number of injuries reported by INEGI and SICT as on-site injuries in accordance with the data collection methodology of these institutions. From this total, the number of hospital admissions (seriously injured) was subtracted and the number of minor injuries (not requiring hospital care) was calculated.

The mortality rate was calculated on a per 100,000 population basis.

The fatality rate was calculated based on the total number of fatalities divided by the number of road crashes per 1,000 crashes. The crash rate was calculated based on the number of road crashes divided by the number of vehicles per 1,000 vehicles.

The motorisation rate was calculated based on vehicle fleet and population per 1,000 inhabitants.

Official sources consulted:

Statistics on traffic accidents, year 2022. SICT/IMT. 2023. Available at:

https://www.sct.gob.mx/carreteras/direccion-general-de- servicios-tecnicos/estadistica-de-accidentes-de-transito/

Death database 1998-2022. INEGI/Health. 2022. Accessed on 24 January 2024 at:

http://www.dgis.salud.gob.mx/contenidos/basesdedatos/bdc_defunciones_gobmx.html

Traffic accidents in urban and suburban areas. INEGI, 2023. Accessed 22 February 2023 at:

https://www.inegi.org.mx/sistemas/olap/proyectos/bd/continuas/transporte/accidentes.asp?s=est&c=13159&proy=atus_accidentes

Hospital discharges. General Directorate of Health Information. Secretaría de Salud, 2022. Accessed on 24 January 2024 at: http://www.dgis.salud.gob.mx/contenidos/basesdedatos/bdc_egresoshosp_gobmx.html

CONAPO population projections version Intercensal Survey 2015. General Secretariat of the National Population Council (CONAPO), 2022. Retrieved from: http://www.dgis.salud.gob.mx/contenidos/basesdedatos/bdc_poblacion_gobmx.htm

Registered motor vehicles in circulation. INEGI, 2022. Retrieved 24 January 2024 from:

https://www.inegi.org.mx/sistemas/olap/proyectos/bd/continuas/transporte/vehiculos. asp?s=est&c=13158&proy=vmrc_vehiculos

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Glossary

Road safety. This is the set of actions and mechanisms that guarantee the proper functioning of traffic circulation, with the main objective of preventing traffic incidents and protecting the physical integrity of road users. This includes a variety of measures, rules and behaviours that seek to minimise the risks associated with the use of vehicles and the traffic of pedestrians, cyclists and other road users.

Serious injuries. These are injuries resulting from traffic accidents that require hospitalisation, surgery or that leave permanent consequences for the victim, such as the loss of a limb, brain damage or permanent disability.

Minor injuries. These are injuries that do not have long-term consequences and are not life-threatening.

Traffic accident: Any occurrence, fact, accident or event on public roads resulting from vehicular and human traffic, involving at least one vehicle and causing death, injury, including where a disability is acquired, or property damage, which can be prevented and its adverse effects mitigated.

Gross Domestic Product (GDP). It is the monetary value of all final goods and services produced within a country's borders during a specific period of time, usually one year.

Right to mobility. This refers to the recognition that everyone has the fundamental right to move freely and to have access to safe, accessible and affordable transport systems. This right is intrinsically linked to other human rights, such as the right to life, health, work, education and the enjoyment of an adequate standard of living.

Safe System. It is a holistic approach to road safety that recognises that human errors are

It therefore seeks to design a transport system that protects users from being seriously injured or killed when these errors occur. The central premise of the safe system is that no error should cost a life.

Irruption of a livestock: This refers to goods that have the capacity to move by themselves, i.e. that can move without the help of agents. In this case it refers mainly to an animal, which is crossing the road.

Vulnerable road users. Vulnerable road users are those road users who, due to their lack of physical protection and/or reduced visibility, are at increased risk of serious or fatal injury if involved in an accident. Vulnerable road users do not have a protective bodywork or structure as in the case of motorised vehicles. These are pedestrians, cyclists and motorcyclists.

Sustainable Development Goals 2030. They are a collection of 17 global goals set by the United Nations in 2015 as part of the 2030 Agenda for Sustainable Development. These goals, which are broken down into 169 specific targets, cover a wide range of social, economic and environmental issues, and are expected to be achieved by 2030.

Road infrastructure. Refers to the set of facilities, constructions and services designed to facilitate and ensure the movement of vehicles and pedestrians through a given geographical area. These structures form an essential part of the transport network of a country or region and have a direct impact on the economy, development and people's quality of life.

Public policy (road safety). Refers to a set of decisions, actions, strategies and programmes adopted by government institutions to address and improve road safety in a given jurisdiction. These policies aim to reduce the number and severity of traffic incidents, protect road users, and improve mobility and the overall quality of life.

Cartography (road safety). Mapping in the context of road safety refers to the use of maps and other visual representations to analyse, understand and communicate information related to traffic and road safety. These maps can be valuable tools for identifying patterns, high-risk zones and areas requiring intervention or improvement.

Mobility pyramid. It is a visual representation that ranks transport modes according to their sustainability, efficiency and priority in urban planning. This pyramid serves as a guide for mobility and urban planning policies, suggesting that the higher levels (the top of the pyramid) should be promoted and prioritised over the higher levels. In this order: people with disabilities, pedestrians, cyclists, public transport users, freight transport and services, and finally cars and motorbikes.

Mortality rate. Refers to the number of road traffic fatalities in relation to a unit of population during a specific period, usually a year. This rate is used to measure and compare road safety between different regions, countries or time periods and to evaluate the effectiveness of road safety interventions and policies. The road safety fatality rate is a valuable tool for identifying road safety problems and trends, setting priorities, designing interventions and assessing the impact of road safety policies.

Fatality rate. Refers to the proportion of people who die as a result of a road traffic crash in relation to the total number of people involved or injured in the crash. This rate provides a measure of the severity of crashes and offers insight into the likelihood that a road traffic event will result in a fatality for those involved.

Accident rate. A metric that refers to the number of traffic events occurring in relation to a reference unit during a specific time period. This rate helps to measure and compare the frequency of events in different contexts, whether between regions, countries or time periods, and is used to assess road safety conditions and the effectiveness of interventions and policies.

Motorisation rate. Refers to the number of motorised vehicles relative to a unit of population, usually per 1,000 inhabitants. This rate provides a measure of vehicle density in a given geographic area and is an indicator of the degree of dependence on or use of motorised transport in a society.

Certified helmet. A helmet that is specifically designed to protect the head of the rider and/or passenger of a motorbike and that has undergone rigorous testing and evaluation to ensure that it meets certain safety standards set by national or international organisations. These standards are designed to ensure that the helmet offers the maximum possible protection in the event of a road traffic incident.

Other driver: These can be distractions and effects of medicines and drugs; as well as aspects related to the driver's health.

Others on the road: These can be bridge piers, lighting poles, trees with diameters greater than 10 cm, discontinuities between metal protective barriers and civil constructions in close proximity to the road.

Vehicle fleet. It refers to the total set of vehicles registered and authorised to circulate in a given geographical area, whether it is a city, a region or a country. This set includes all types of vehicles, such as cars, motorbikes, trucks, buses, among others, that have the necessary documentation and permits to operate on public roads.

Claims ratio. A metric used to assess the frequency of crashes in a given context, be it a geographical region, a specific sector or a particular population. In the field of road safety, this index allows the analysis of the proportion of traffic events in relation to a reference unit, such as the number of vehicles, the number of inhabitants or the distance travelled.

Physical-mechanical conditions. These refer to the condition and proper functioning of the various components and systems of a vehicle that ensure its safe operation on the road. Maintaining these conditions is essential for the safety of the driver, passengers and other road users, as well as for the care of the environment, since a vehicle in poor condition can generate higher pollutant emissions.

Slope. In the context of road infrastructure, slope refers to the degree of inclination of a road, path or any traffic surface with respect to a horizontal plane. It is usually expressed as a percentage and describes how much a road rises or falls in relation to the horizontal distance travelled.

Semi-vehicle. In the field of road safety, the term "semoviente" refers mainly to large animals (such as cows, horses, donkeys, etc.) that may be present on roads and tracks, representing a potential accident risk for vehicles in transit.

Recklessness. Recklessness in the context of road safety refers to negligent, careless or irresponsible actions or behaviour by road users (drivers, pedestrians, cyclists, among others) that can increase the risk of road crashes. These actions often go against regulations or good driving and movement practices in the road space.

Tangent. In the field of road engineering and design, a tangent refers to a road segment that follows a straight and level path, i.e. without curves or elevation changes. Tangents are the opposite of curves in road design.