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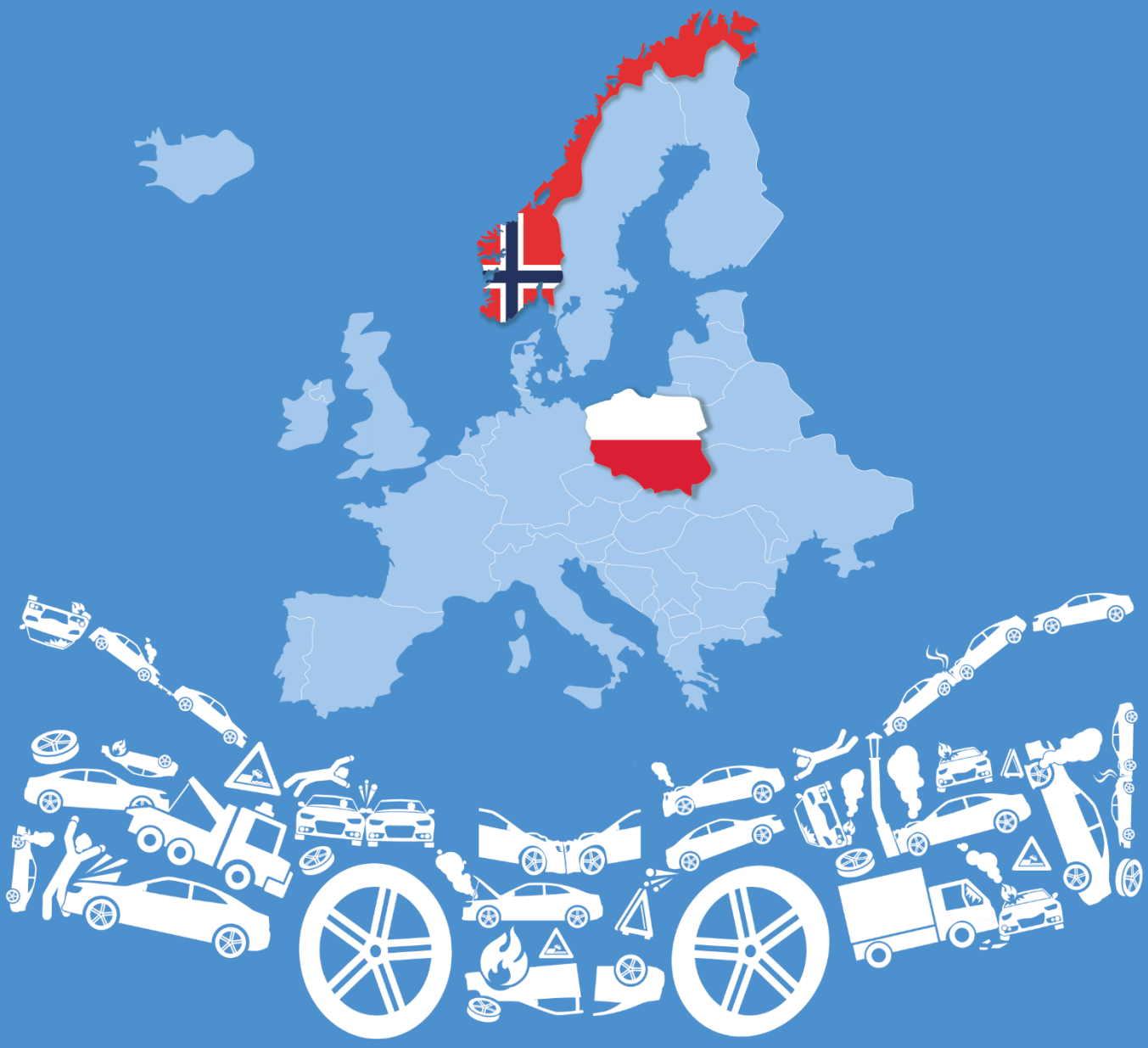
A Comprehensive Comparative Study on Road Traffic Safety in Norway and Poland



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GLOSSARY OF TERMS AND ABBREVIATIONS

ACC	Automatic Cruise Control.
AIS	Abbreviated Injury Scale.
ATC	Automated Traffic Control (Norwegian: *Automatisk Trafikkontroll*).
Bane NOR	The Norwegian government agency responsible for railway infrastructure.
CANARD	The Centre for automatic traffic enforcement (Polish: *Centrum Automatycznego Nadzoru nad Ruchem Drogowym*).
CUPT	The Centre for EU Transport Projects (Polish: *Centrum Unijnych Projektów Transportowych*).
EFTA	The European Free Trade Association.
ESC	Electronic Stability Control.
GDDKiA	The General Directorate for National Roads and Motorways in Poland (Polish: *Generalna Dyrekcja Dróg Krajowych i Autostrad*).
GITD	The Chief Inspectorate of Road Transport (Polish: *Główny Inspektorat Transportu Drogowego*).
GUS	The Central Statistical Office of Poland (Polish: *Główny Urząd Statystyczny*).
HDI	Human Development Index.
ITD	The Road Transport Inspection (Polish: *Inspekcja Transportu Drogowego*).
ITS	Intelligent Transportation Systems.
KGP	The Polish National Police Headquarters (Polish: Komenda Główna Policji).
KPIs	Key Performance Indicators.
LDW	Lane Departure Warning.
LGUs	Local government units.
LPR	The Air Ambulance Service (Polish: *Lotnicze Pogotowie Ratunkowe*).
MAIS	Maximum Abbreviated Injury Scale.
MI	The Ministry of Infrastructure (Polish: Ministerstwo Infrastruktury).

NCBR	The National Centre for Research and Development (Polish: *Narodowe Centrum Badań i Rozwoju*).
NHO Transport	The transport employers' organisation in Norway.
NMCU	The Norwegian Motorcyclists Union (Norwegian: *Norsk Motorcykkel Union*).
NPBRD	The National RTS Programme 2021–2030 (Polish: *Narodowy Program Bezpieczeństwa Ruchu Drogowego 2021–2030*).
NTR	The National Trauma Registry.
NVDB	The Norwegian Road Data Bank (Norwegian: *Nasjonal vegdatabank*).
OECD	Organisation for Economic Co-operation and Development.
PG	The Gdańsk University of Technology (Polish: *Politechnika Gdańska*).
PK	The Tadeusz Kościuszko Kraków University of Technology (Polish: *Politechnika Krakowska im. Tadeusza Kościuszki*).
PPP	Purchasing Power Parity.
PW	The Warsaw University of Technology (Polish: *Politechnika Warszawska*).
PWr	The Wrocław University of Technology (Polish: Politechnika Wrocławska).
RID	The Road Innovation Development (Polish: *Rozwój Innowacji Drogowych)*.
RISM	The Road Infrastructure Safety Management.
ROADPOL	The European Roads Policing Network. Previously known as TISPOL (Traffic Information System Police).
RSI	Road Safety Inspection.
RTS	Road Traffic Safety.
RTSMS	The Road Traffic Safety Management System.
SD	The Ministry of Transport and Communications (Norwegian: *Samferdselsdepartementet*).
SEWIK	The Polish Accident and Collision Register (Polish: *System Ewidencji Wypadków i Kolizji*).

SHK	The National Accident Investigation Commission (Norwegian: *Statens havarikommisjon*).
SI	The Norwegian National Debt Collection Agency (Norwegian: *Statens innkrevingssentral*).
SJT	The Norwegian Rail Transport Office (Norwegian: *Statens jernbanetilsyn*).
SKRBRD	The Secretarat of National RTS Council (Polish: *Sekretariat Krajowej Rada Bezpieczeństwa Ruchu Drogowego*).
SRT2030	The Transport Development Strategy until 2030 (Polish: *Strategia Rozwoju Transportu do 2030 r.*).
SSB	The Central Statistical Office of Norway (Norwegian: *Statistisk sentralbyrå*).
Storting	Unicameral Parliament of the Kingdom of Norway.
SV	The Norwegian Public Roads Administration (Norwegian: *Statens vegvesen*).
TØI	The Institute of Transport Economics, based in Oslo (Norwegian: *Transportøkonomisk institutt*).
TRULS	The Norwegian Public Roads Administration internal database.
TS	Norwegian-language equivalent of the abbreviation RTS (Norwegian: *Trafikksikkerhet*).
TT	The Norwegian National Road Safety Council (Norwegian: *Trygg Trafikk*).
UAG	The Accident Analysis Group (Norwegian: *Ulykkes Analyse Gruppe*).
UN	The United Nations.
UP	Norwegian National Road Policing Service (Norwegian: *Utrykningspolitiet*).
VRUs	Vulnerable Road Users.
VTS	The Traffic Control Centers (Norwegian: *Veitrafikksentralene*).
YRK	The Norwegian Union of Drivers and Logistics Workers (Norwegian: *Yrkestrafikkforbunded*).

Summary

SUMMARY

Poland and Norway differ geographically, naturally, culturally, historically, and politically. Many differences also pertain to the field of road traffic safety (RTS), though there are also numerous similar solutions.

Among the primary differences between Poland and Norway are those related to legal regulations. In Norway, the main legal instruments are laws, whereas in Poland, both laws and regulations are prevalent. This is due to differences in legislative techniques and legal structures. Additionally, the Norwegian Public Roads Administration (SV) and the Norwegian National Road Policing Service (UP) are authorised to issue directives, recommendations, and guidelines in the RTS area. SV-issued directives can also apply to managers of lower-category roads. Such rules do not exist in Poland.

Both countries have national RTS programs that outline a vision, main goals, and actions to achieve them. In addition to these national programs, there are also regional and local RTS programs.

The Ministry of Transport and Communications (SD) is responsible for RTS in Norway, operating through SV, with the involvement of UP. The Norwegian Directorate of Health, the Norwegian Directorate for Education and Training, the Norwegian RTS Council (*Trygg Trafikk*, TT), selected municipalities, state bodies, and public organisations provide analytical and advisory input. SV coordinates RTS efforts, including on municipal and county roads. However, traffic management on these roads is handled by separate road authorities: county and municipal road boards. Nonetheless, SV issues recommendations and directives that these authorities follow.

The evaluation system for RTS is complex and varies between the two countries in terms of data collection, assessment methods, and analysis utilisation. The evaluation measures, classification of safety risks, and assessment of action effectiveness also differ. However, there are converging points, such as the use of RTS audits and inspections, although these are adapted to the specificities of each country.

The Norwegian Police (UP) plays a key role in the RTS system, tasked with improving RTS, combating and penalising road violations and crime, providing assistance in emergency situations, and developing new methods and materials for RTS. UP also participates in detailed investigations following fatal road accidents, working alongside SV personnel. The police also review certain amendments to permanent traffic organisation aimed at improving RTS and the location of speed measurement systems. The priority of the Norwegian police, similar to that of the Polish police, is enforcing speed limits and conducting routine checks, which include random sobriety tests for drivers. In this area, UP works closely with SV. The activities of the Norwegian police closely resemble those of the Polish police.

In Norway, there are no imposed restrictions on the creation of initiatives aimed at improving road traffic safety (RTS). Decisions to approve such initiatives on public roads are made by the Ministry of Transport and Communications (SD), which also funds the Norwegian Public Roads Administration (SV). However, SD has no direct legal influence over actions taken by the Norwegian National RTS Council (*Trygg Trafikk*, TT), although it partially finances it. The police and public road authorities can also initiate changes. The main difference in the "path" of idea implementation between Poland and

Norway lies in the independence of initiatives, ideas, and their execution by TT. In Poland, these tasks are fully coordinated by the National RTS Council, which reports to the Minister of Transport.

Regarding information sources, in Poland, the primary system is the Accident and Collision Record System (SEWIK), managed by the National Police Headquarters. SEWIK supplies data to, among others, the Road Traffic Safety Observatory at the Motor Transport Institute, the General Directorate for National Roads and Motorways (GDDKiA), as well as databases concerning accidents in voivodships and on local roads, used for research purposes. In Norway, the main source is also a database managed by the police, with data transmitted to the Norwegian Bureau of Statistics (SBB) and SV, which manages the NVDB and TRULS databases.

A key difference between Poland and Norway regarding penalties and their enforcement is Norway's system, where fines are determined by the offender's income, financial capacity, and personal circumstances. This system has a preventive and deterrent effect. It is not applied to minor offences penalised with on-the-spot fines. In Norway, driving under the influence of alcohol is treated much more severely than in Poland, often resulting in fines, loss of driving privileges, and, in many cases, mandatory imprisonment.

In both countries, recent years have seen changes in the approach to RTS management. In Norway, there has been debate about the SD's proposal to change fine rates and methods of issuing tickets. In Poland, the 2022 revision of the penalty point system and the 2024 introduction of vehicle confiscation for drunk drivers are comparable changes. Both countries also analyse factors influencing RTS. One key factor is the impact of different restrictions, penalties, and their certainty on alcohol-related offences. In Norway, the severity of fines, based on the offender's income, is an important deterrent, along with the mechanism of automatically converting unpaid fines into imprisonment.

Key differences between Poland and Norway relate to the initiation of preventive actions based on RTS analysis and road accident outcomes. In Norway, a fatal road accident triggers a thorough analysis of potential preventive measures at the accident site, with SV working alongside the police. This contrasts with the Polish system, where police, prosecutors, and courts handle accident investigations, and road managers simply record the accident data for statistical purposes. These data are then reviewed collectively.

In Norway, studies on the police's impact on RTS are primarily conducted by the Institute of Transport Economics. Their effectiveness is evaluated by analysing various issues, such as the impact of seatbelt use on accident victimisation, adherence to speed limits on accident reduction, or how increased sobriety checks affect accident risk. It has also been observed that a certain level of police control is essential for alcohol limits to be effective over time. The impact of different police actions on reducing fatalities and serious injuries in road accidents is also analysed.

The conclusions of this comparative analysis have allowed the formulation of a variety of recommendations for improving RTS in Poland. These recommendations cover infrastructure, penalties, traffic organisation and management, education, research, restrictions, and other RTS-related aspects.

Poland and Norway – basic data

Poland

Capital:
Warsaw
(1,863,056 inhabitants in 2023)[a]

Area:
313,931 km^2 (69th in the world)[c]

Population:
37,636,508 people[e] (2023, 37th in the world)[f]

Population Density:
120 people/km^2[c]

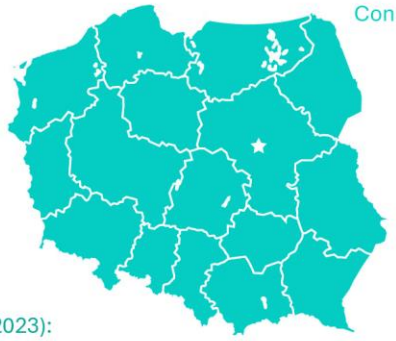
Ethnic Composition:
98.6% Poles,
1.4% other nationalities (2021)[g]

Government System:
Unitary parliamentary republic

Administrative Structure:
16 voivodeships, 380 counties (powiaty)
and cities with county rights, 2,477 municipalities

Parliament:
Sejm (lower house) and Senate (upper house)

Constitution:
Constitution of 2 April 1997



Gross Domestic Product (GDP) (2023):
$1.705 trillion (PPP)[h];
$808.435 billion (nominal)[h]

GDP per capita (2023):
$46,411 (PPP)[h];
$21,995 (nominal)[h]

Gini Coefficient (2023):
27,0[i]

Human Development Index (HDI, 2022):
0.881 (36th in the world)[j]

Norway

Capital:
Oslo
(716,261 inhabitants in 2023)[b]

Area:
384,482 km^2 (61st in the world)[b]

Population:
5,562,363 people[b] (2024, 119th in the world)[f]

Population Density:
14,4 people/km^2[b]

Ethnic Composition:
81.5% Norwegians,
18.5% other nationalities (2021)[b]

Government System:
Unitary constitutional monarchy

Administrative Structure:
5 regions (landsdeler, geographical
and cultural significance),
15 counties (v), 365 municipalities (kommuner)

Parliament:
Storting (unicameral)

Constitution:
Constitution of 17 May 1814

Gross Domestic Product (GDP) (2023):
$443.482 billion (PPP)[h];
$485.513 billion (nominal)[h]

GDP per capita (2023):
$80,143 (PPP)[h];
$87,739 (nominal)[h]

Gini Coefficient (2023):
24,7[i]

Human Development
0.966 (2nd in the world)[j]

Data sources: [a] Bank Danych Lokalnych GUS; [b] *Statistisk sentralbyrå*; [c] *Powierzchnia i ludność w przekroju terytorialnym w 2023 r.*, GUS, Warsaw, 2023; [d] Generalna Dyrekcja Ochrony Środowiska; [e] *Ludność. Stan i struktura ludności oraz ruch naturalny w przekroju terytorialnym w 2023 r. Stan w dniu 31 grudnia*, GUS, Warsaw, 2024; [f] United Nations Population Fund; [g] *Narodowy Spis Powszechny 2021 – wyniki ostateczne*, GUS, 2024; [h] *World Economic Outlook Database*, International Monetary Fund (IMF); [i] *Gini coefficient of equivalised disposable income*, Eurostat; [j] *Human Development Report 2023/2024*, United Nations Development Programme, New York, 2024.

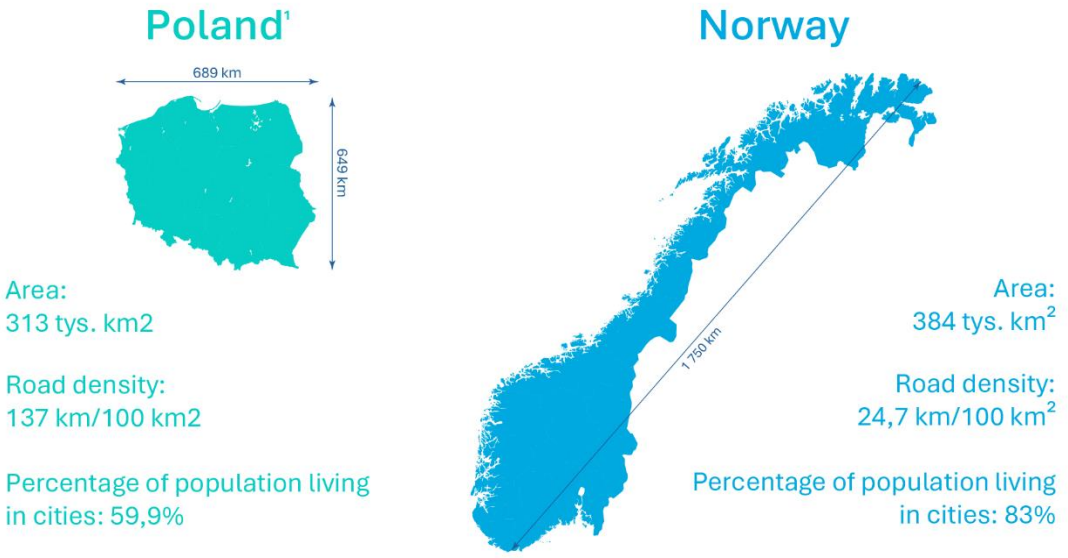
1

Introduction

1..INTRODUCTION

Road Traffic Safety (RTS) in the modern world, so heavily dominated by motor transport, is an extremely important aspect of every individual's life. It affects not only drivers and passengers but also every road user, posing a real risk of health loss and even death. Therefore, it is crucial to strive towards reducing, or ideally eliminating, all factors that could lead to a road accident. This approach, known as Vision Zero, is becoming increasingly popular, and the challenge of reducing the number of serious injuries and fatalities on the roads to zero is being taken on by more and more countries. One such country is Norway, whose efforts allow for annual improvements in road safety and which is already a global leader in this field, making it an excellent example for other countries to follow. This study is a comprehensive comparative analysis of Poland and Norway concerning the legal, organizational, regulatory, educational, and other measures affecting the level of RTS in both countries. The aim of this study is to identify key differences in all these aspects and to find answers to the question: what changes should be made in Polish regulations, actions, initiatives, etc., to follow Norway's example in road safety.

To begin comparing RTS issues in Norway and Poland, it is essential to start by examining how these two countries differ from each other. This applies to many areas, including geography, demographics, culture, climate, etc. Although both countries have fairly similar land areas, Poland is more square-shaped, while Norway is very elongated longitudinally. This has significantly impacted the development of their road networks in their current configuration and continues to affect the ability to cover routes of varying lengths within domestic travel.



It can be considered that even more significant than the shape of the countries is their physical characteristics. Poland is a lowland country with a very smooth and short coastline. In contrast, Norway, although its highest peak (Galdhøpiggen, 2469 m) is comparable to Rysy, is extremely mountainous and has a very long, highly indented coastline, thanks to its majestic fjords and a high

[1]Data sources: Poland – Bank Danych Lokalnych GUS; Norway – *Statistisk sentralbyrå*.

proportion of inland waters. This means that Polish roads are largely straight and flat, while Norwegian roads are characterized by numerous tunnels, bridges, dangerous curves, steep ascents and descents. Additionally, they are prone to erosion (both from mountains and the sea), landslides, and falling rocks, making Norwegian roads statistically much more dangerous than Polish ones from a geographical perspective.

Furthermore, the natural and climatic conditions add to the risks: much of Norway lies above the Arctic Circle, which results in lower average temperatures, greater snowfall, and, due to the country's coastal location and proximity to the Gulf Stream, a significantly higher exposure to rain. It should also be noted that Norway's more northerly position brings very long periods of darkness, including polar nights, which is another factor potentially worsening road safety that does not occur in Poland.

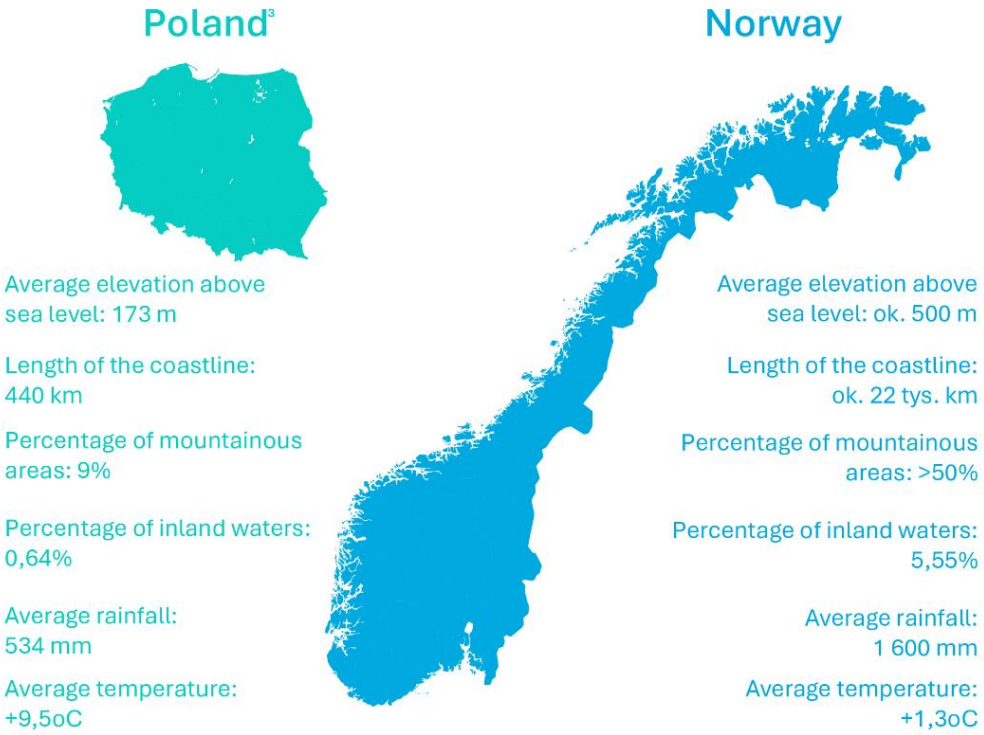
Another key natural aspect differentiating the two countries is the frequency of wildlife encounters on the roads. In Poland, this is a significant but not primary hazard. In Norway, however, the abundance of wildlife is a crucial issue affecting road safety, as evidenced by measures such as painting reindeer antlers with fluorescent paint to improve their visibility at night, warnings issued by transport-related institutions, and numerous studies on this topic.

All these geographical and natural aspects have a considerable impact on road safety, leading to the assumption that Norway might be perceived as a much less safe country for road users than Poland. However, demographic, cultural, and generally anthropogenic factors also come into play at this point.

The Kingdom of Norway has a significantly lower population than Poland, and thus a lower population density, as well as a less dense road network. Additionally, urban areas are much more concentrated in specific locations (on the coast and in limited lowland areas), in contrast to the more evenly distributed development in Poland. Furthermore, it is important to note that southern Norway is much more urbanized than the northern part of the country, with a higher proportion of the population living in cities. Combined with the unique natural and geographical characteristics, this means that the proportion of roads in built-up areas, and areas where one might encounter people (which could potentially contribute to accidents), is much higher in Poland than in Norway.

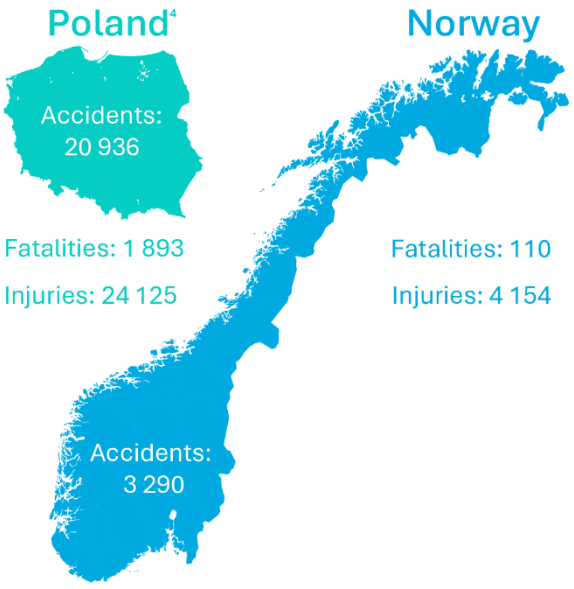
The overall picture of the fundamental differences between the two countries is further complemented by cultural factors. Norwegians are accustomed to dealing with demanding natural and geographical conditions, and the history of their homeland is quite different from that of Poland. Their commitment to equality in all aspects of social life extends to the roads as well, where everyone is treated equally. This results in a high level of mutual social control being not only acceptable but encouraged in Norway, unlike in Poland. The average Norwegian is expected, and even encouraged, to report to the relevant authorities if they observe someone breaking traffic regulations or otherwise compromising the safety of others. This is facilitated by public access to certain data, such as vehicle registrations and driving licenses[2]. In Poland, such behaviours are not only undervalued but often even stigmatized.

[2] Access to vehicle registration data: https://www.vegvesen.no/nn/koyretoy/kjop-og-sal/koyretoyopplysningar/finn-eigaren-av-koyretoyet/ (accessed: 19 July 2024). Access to the driving license database: https://www.vegvesen.no/nn/forarkort/har-forarkort/sjekk-andres-forerkort/ (accessed: 19 July 2024)



Additional elements in this puzzle of road safety include issues such as the number and characteristics of vehicles registered in both countries, the methods of driver and road user education, and the promotion of road safety. Also important are the national, regional, and local road safety strategies and programmes, the approach to young people and seniors, among others. All key issues are discussed in the following chapters of this report.

Without assessing which system is superior, it [4]should be noted that from the perspective of road traffic and its interaction with other road users, the order and safety in Norway are currently unattainable for Poland. Conversely, the prevalence of incidents causing danger or discomfort to drivers, pedestrians, cyclists, and others moving on roads and sidewalks in Poland is equally concerning and, unfortunately, socially accepted. It is hoped that actions based on the conclusions of this report will help prevent further tragedies on Polish roads.



[3] Data sources: Poland – Generalna Dyrekcja Ochrony Środowiska; Norway – *Statistisk sentralbyrå*.
[4] Data sources: Poland – Wypadki drogowe w Polsce w 2023 roku, Komenda Główna Policji. Biuro Ruchu Drogowego. Warszawa 2024; Norway – Årsrapport 2023, Statens vegvesen. Transport og Samfunn. Trafikksikkerhet. Lillehammer 2024

2

Methodology

2..METHODOLOGY

To carry out a detailed comparative analysis of road safety (BRD) issues in Poland and Norway, a literature review was primarily conducted. This review involved gathering and analysing a comprehensive base of reports and compilations from both countries, including:

- reports and studies from the Polish and Norwegian police, road safety management entities, managers of various types of roads, and other organizations related to road safety in both countries;
- strategic documents from both countries (strategies, programs, plans, etc.);
- scientific articles in journals and online, as well as research papers (including master's theses and bachelor's theses) on road safety and related topics covering Poland, Norway, and Europe and/or the European Union;
- audit reports from the Polish Supreme Audit Office (Polish: *Najwyższa Izba Kontroli*, NIK) concerning road safety;
- comprehensive works on road safety (books, textbooks);
- guidelines for implementing road safety tools and instructions for carrying out related procedures;
- statistical compilations and reports (including data from the Polish Central Statistical Office, Norwegian *Statistisk sentralbyrå*, Eurostat, European Transport Safety Council) and other materials (presentations, fact sheets, mentions, reports, etc.).

In addition to the thorough analysis of all the aforementioned materials, a comprehensive review and comparative analysis of all legal acts (including laws and regulations) directly and indirectly related to road safety in Poland and Norway was conducted. A detailed analysis of the judicial practice of criminal courts in Poland and Norway concerning the studied issue was also carried out.

The research was supplemented with individual in-depth interviews (IDI) conducted with representatives of the Norwegian Police and lawyers dealing with road safety issues in Norway.

As a result of these research methods, detailed comparative descriptions of Poland and Norway regarding the state, management, and prospects for changes in road safety, as well as synthetic tabular summaries of all aspects of the discussed topic, were produced. Based on this, a series of recommendations for Poland was proposed.

3

Road safety in Poland and Norway and the factors influencing it

3..Road safety in Poland and Norway and the factors influencing it

Below are the key details regarding the road safety situation in Poland and Norway, influenced by various conditions in both countries, affecting the level of road safety. This chapter provides a synthetic comparison of quantitative and qualitative data related to accidents, driver education, and the safety of vulnerable road users. It also includes a comparison of information on vehicles in operation in Poland and Norway, the state of roads in both countries, and the specifics of safety at railway crossings. This data serves as an introduction to further, detailed comparative analyses in the area of road safety.

3.1. Road accidents

The statistics[5] on accidents in Poland and Norway are vastly different. Over the past decade, the number of accidents in Norway averages just 13.8% of the number of accidents in Poland. The number of fatalities in Norway is only 4.3% of that in Poland, while the number of injuries in Norway is 14.7% of the corresponding figure for Poland. Similar proportions are observed when analysing the number of accidents per 100,000 inhabitants. Historically, the peak number of road casualties in Norway occurred around the turn of the 1960s and 1970s[6], while in Poland, the most tragic period was the 1990s.[7] Since then, both countries have experienced a downward trend in accident rates.

Figure 1. Number of road accidents in the years 2014–2023

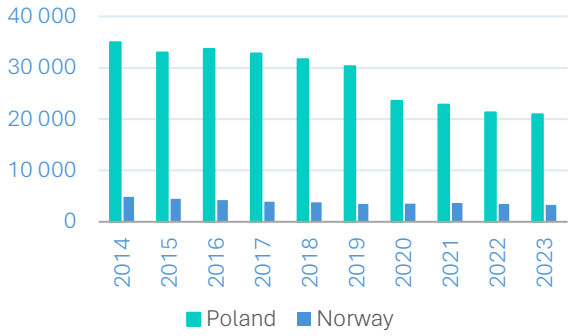
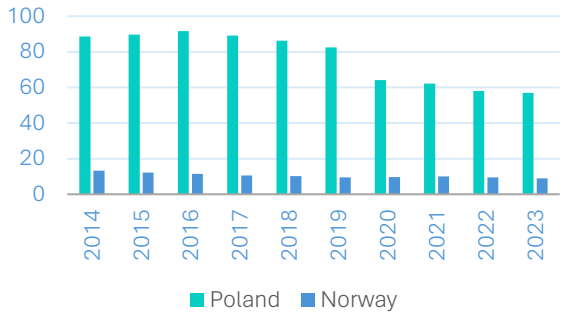


Figure 2. Number of accidents per 100,000 inhabitants in the years 2014–2023



Source: own elaboration based on: *Wypadki drogowe w Polsce w 2023 roku*, Komenda Główna Policji. Biuro Ruchu Drogowego. Warsaw, 2024; *Årsrapport 2023*, Statens vegvesen. Transport og Samfunn. Trafikksikkerhet. Lillehammer, 2024.

In Poland, the highest number of accidents are recorded during the summer months (June – September), on Fridays and Mondays, and in the afternoon hours (14:00–19:00). Notably, the majority of these accidents occur in good weather conditions (65%) and during the daytime (71%).

[5] All statistical data on accidents comes from the following sources: *Wypadki drogowe w Polsce w 2023 roku*, Komenda Główna Policji. Biuro Ruchu Drogowego. Warsaw, 2024; *Årsrapport 2023,* Statens vegvesen. Transport og Samfunn. Trafikksikkerhet. Lillehammer, 2024; Population data from Eurostat (accessed: July 17-18, 2024).

[6] *Road Safety in Norway. Presentation for ETSC Road Safety PIN Conference*, Norwegian Ministry of Transport and Communications, Brussels, 19 June 2018.

[7] *Wypadki drogowe w latach 1975-2011*. Statystyki Komendy Głównej Policji. https://statystyka.policja.pl/st/ruch-drogowy/76562,Wypadki-drogowe-raporty-roczne.html (accessed: July 19, 2024).

Regarding locations, the most dangerous areas are roads in built-up areas (71%), on straight sections (60%) of two-way single carriageway roads (80%), with most accidents occurring on the roadway itself (68%).

In contrast, Norwegian statistics do not provide a detailed analysis of **numbers of accidents** based on factors such as weather conditions, locations, or times of day. Instead, they focus on the number of **fatalities or injuries** under specific conditions, **making the context more subjective than in Poland**.

Regarding numbers, in Norway, most accidents also occur in the summer (May – September), on Mondays and Fridays, and between 14:00 and 18:00. The main culprits are drivers of passenger cars in 38% of cases, and 46.9% of accidents happen on county roads. Similar to Poland, the majority of accidents in Norway (61%) also occur outside intersections.

A positive aspect observed from the data analysis over the years is that the trends in road safety in Poland show a much faster decline in various metrics. This is naturally easier to achieve in Poland, where the base numbers are much higher. Nonetheless, this is considered a success and is recognized in Europe, as Poland has been rated as the country with the highest decrease in accident fatalities in recent years (2023 Road Safety PIN Award). This is evident in the statistics, which show that over the past decade, the number of fatalities and injuries on Polish roads has decreased by over 40% (deaths) and over 45% (injuries). In Norway, for the same period, these figures were over 25% and over 30%, respectively.

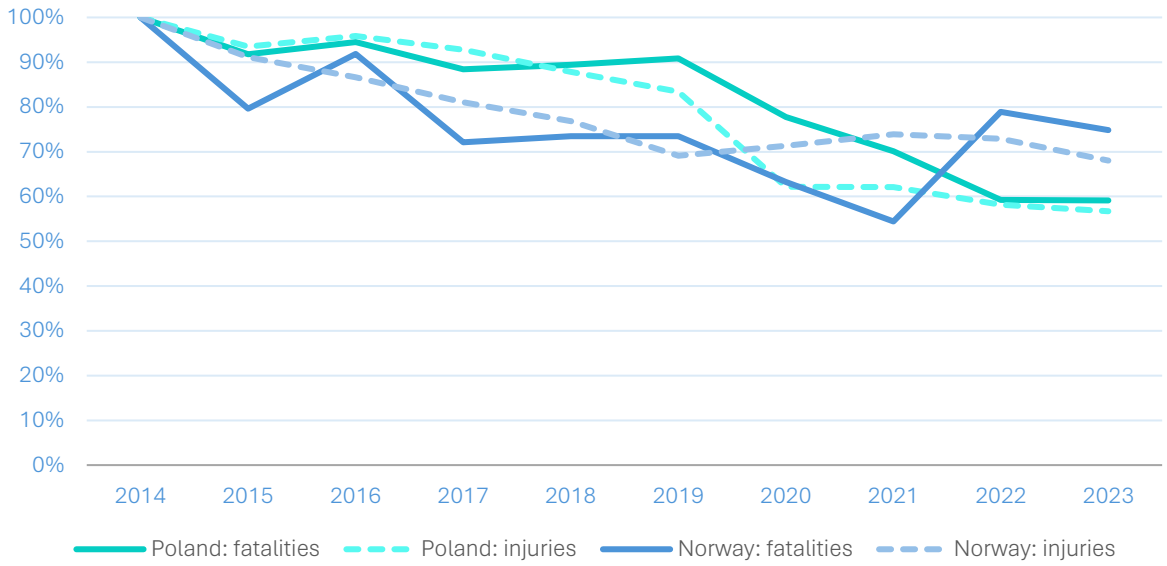
Table 1. Dynamics of the number of fatalities and injuries in Poland and Norway from 2014 to 2023

Year	Poland				Norway			
	Fatalities	2014=100%	Injuries	2014=100%	Fatalities	2014=100%	Injuries	2014=100%
2014	3202	100.00%	42545	100.00%	147	100.00%	6107	100.00%
2015	2938	91.76%	39778	93.50%	117	79.59%	5566	91.14%
2016	3026	94.50%	40766	95.82%	135	91.84%	5290	86.62%
2017	2831	88.41%	39466	92.76%	106	72.11%	4951	81.07%
2018	2862	89.38%	37359	87.81%	108	73.47%	4693	76.85%
2019	2909	90.85%	35477	83.39%	108	73.47%	4220	69.10%
2020	2491	77.80%	26463	62.20%	93	63.27%	4355	71.31%
2021	2245	70.11%	26415	62.09%	80	54.42%	4513	73.90%
2022	1896	59.21%	24743	58.16%	116	78.91%	4451	72.88%
2023	1893	59.12%	24125	56.70%	110	74.83%	4154	68.02%

Source: *Wypadki drogowe w Polsce w 2023 roku*, Komenda Główna Policji. Biuro Ruchu Drogowego. Warsaw, 2024; *Årsrapport 2023*, Statens vegvesen. Transport og Samfunn. Trafikksikkerhet. Lillehammer, 2024.

Since absolute numbers may not fully reflect the actual scale of the phenomenon, it is useful to compare trends in the number of fatalities and injuries per 100,000 inhabitants. In this context, it can be seen that Poland and Norway achieve quite similar results. In recent years, Norwegian statistics, which had previously been slightly better than Polish, have deteriorated slightly. Thus, it can be concluded that the current level of road safety in Poland is improving more rapidly than in Norway (although the number of accidents, fatalities, and injuries in Poland remains incomparably higher).

Figure 3. Change in the number of fatalities and injuries per 100,000 inhabitants compared to 2014



Source: own elaboration based on: *Wypadki drogowe w Polsce w 2023 roku*, Komenda Główna Policji. Biuro Ruchu Drogowego. Warsaw, 2024.; *Årsrapport 2023*, Statens vegvesen. Transport og Samfunn. Trafikksikkerhet. Lillehammer, 2024.

The situation differs somewhat when considering the rate of fatalities and injuries per 100 accidents. Here, stagnation is observed in both countries, with a slight increase in the number of deaths per 100 accidents in Poland. However, much better statistics are seen with regard to the number of injuries per 100 accidents, where, despite stagnation in Norway, Poland has recorded a significant decrease in this indicator. This indicates that not only is the number of accidents on Polish roads decreasing significantly, but the associated risk is also diminishing. In Norway, having already achieved such excellent absolute results, it is likely to be challenging to further improve the road safety level.

Figure 4. Number of fatalities per 100 accidents in the years 2014–2023

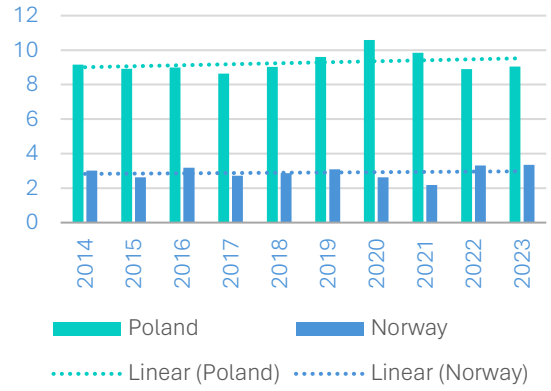
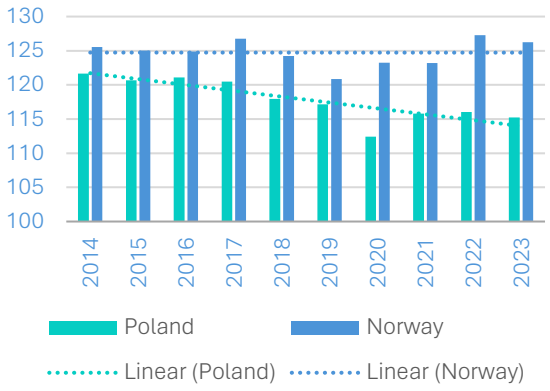


Figure 5. Number of injured per 100 accidents in the years 2014–2023



Source: own elaboration based on: *Wypadki drogowe w Polsce w 2023 roku*, Komenda Główna Policji. Biuro Ruchu Drogowego. Warsaw 2024., *Årsrapport 2023*. Statens vegvesen. Transport og Samfunn. Trafikksikkerhet. Lillehamer 2024.

On Polish roads, 72% of accident perpetrators are men, 14% are young drivers (aged 18-24), and 17% are individuals aged 60 and older. In Poland, accidents are most often caused by drivers (91%) of passenger cars (67%), and these are usually due to various types of failure to yield (about 30% of incidents) or speeding (22%). **Statistically, it is notable that nearly 30% of accidents on Polish roads result from improper driving (e.g., turning, overtaking, reversing) and violation of traffic rules (e.g., failure to maintain a safe distance, non-compliance with traffic signals).** The overall picture is further compounded by over 9% of accidents involving individuals under the influence of alcohol and/or other psychoactive substances.

In Norway, the causation of accidents is analysed from a different perspective. According to the National Road Safety Plan 2022-2025, the key focus areas for achieving the Norwegian Vision Zero are primarily:

- Adjusting speed;
- Combating driving under the influence of intoxicants;
- Ensuring proper seatbelt use and securing minors in vehicles;
- Addressing driver distraction (e.g., using mobile phones).

Next, it was deemed important to undertake road safety measures associated with specific social groups (e.g., young drivers or seniors) and other detailed actions. As such, both the statistics and the resulting priorities for corrective actions differ in the two analysed countries.

A common method for analysing road safety levels in both countries is the use of eight European Key Performance Indicators (KPIs). Based on this, it can be stated that the level of road safety in Norway is statistically higher than in Poland, although Poland still has significant issues to address.

Table 2. Comparison of KPI indicators for Poland and Norway according to 2023 data

KPI	Description	Poland	Norway	EU
Speed	Percentage of car drivers who reported exceeding the speed limit outside built-up areas (but not on highways) at least once in the past 30 days.	74%	78%	68%
Safety belt (and CRS)	Percentage of car passengers who reported not wearing seat belts on the rear seat at least once in the past 30 days.	51%	22%	37%
Protective equipment (helmets)	Percentage of cyclists who reported wearing a helmet at all times in the past 30 days.	20%	44%	31%
Alcohol (and other intoxication)	Percentage of car drivers who reported driving at least once in the past 30 days with a blood alcohol concentration exceeding the legal limit.	6%	8%	13%
Distraction	Percentage of car drivers who reported using a mobile phone while driving without a hands-free set or similar at least once in the past 30 days.	42%	33%	29%
Vehicle safety	Percentage of new passenger cars with an Euro NCAP safety rating equal to or above the minimum acceptable threshold.	n/a	n/a	n/a
Infrastructure	Percentage of distance travelled on roads with a safety rating above the agreed threshold.	n/a	n/a	n/a
Post-crash care	Time elapsed in minutes and seconds from the call for assistance after an accident to the arrival of emergency services on site.	n/a	n/a	n/a

Source: own elaboration based on: National Road Safety Profile – Norway and National Road Safety Profile – Poland. European Road Safety Observatory. February 21, 2023.

3.2. Driver and other road user education and road safety promotion

Driver education in Poland and Norway is quite similar, but there are some significant differences. A key topic in this analysis is the mandatory road safety education sessions: in Poland, they consist of 4 hours of first aid training, while in Norway, these sessions last 13 hours and cover a wide range of topics, including risks and dangers associated with driving and accident prevention. Additionally, in Norway, unlike in Poland, driver training includes night driving and driving in conditions such as skidding. The table below details the most important differences between the two countries. The comparison is made using category B drivers, as they are responsible for the highest number of accidents.

Table 3. Comparison of key aspects in the process of obtaining a Category B driving license in Poland and Norway

Aspect	Poland	Norway
Minimum age	Course start: 17 years and 9 months Pass the exam: 18 years	Course start: 15 years Pass the exam: 18 years
Theoretical course	**Not mandatory** (26 hours) Self-study allowed	**Mandatory** for those under 25 years (17 hours)
Theoretical exam	**Mandatory** • Access to a public set of over 2,000 closed questions • Need at least 92% correct answers out of 74 questions	**Mandatory** • Access only to a list of topics covered in the exam with closed questions • Need at least 85% correct answers out of 45 questions
Pratical course	**Mandatory** (30 hours)	**Mandatory** • At a driving school or privately – see: "Driving before/instead of practical course." • In addition to typical topics, it also includes extreme driving, e.g., skidding.
Practical exam	**Mandatory**	**Mandatory** (55-60 min) Topics also covered include: • eco-friendly and economical driving, • driving behaviour and culture, • safe driving, • human factors and interactions on the road, • driving in traffic jams, tunnels, and darkness.
Examination car	**Property of the examination centres**	**Own vehicle** approved by SV or rented from a driving school.
Medical exam	**Mandatory**	**Mandatory**
Learning materials	• Textbooks from various publishers and driving schools. • Traffic code. • Materials for purchase or available as part of the course fee.	Publicly available standardized textbooks from *Statens vegvesen* (also available in English; covering aspects related to young drivers, accidents, etc.) https://www.vegvesen.no/nn/fag/trafikk/godkjenning-og-tilsyn-med-trafikkopplaring/forskrifter-og-laereplaner/
Driving in darkness	**Not mandatory**	**Mandatory** The vehicle is driven by an instructor while the trainee is a passenger. Failure to complete this part of the course results in not being allowed to drive from November 1st to March.
Road Safety course	**Mandatory** (4 hours) Only a first aid course, including theory and exercises. It can be taken at any time during the driving license course.	**Mandatory** 4-part (13 hours) It is recommended to complete other required courses before taking the first aid course. The course covers, among other things: • Risks and hazards associated with driving • Accident prevention • Ability to self-assess one's own capabilities

Aspect	Poland	Norway
Driving before/instead of practical course	Not allowed	**Recommended** Driving can be done having passed the theoretical exam and only with a person who: • is at least 25 years old • has held a driving license for at least five years • is in good health and able to respond quickly in case of a dangerous situation on the road It is recommended to practice driving as much as possible before taking the exam to gain as much experience as possible.
Additional driving license opportunities	**Not available** Possible only through driving schools	Possibility to obtain a driver's license through an elective course in 9th and 10th grades **at school.**
Basic information on licensing procedure and available materials	• Government website https://www.gov.pl/web/gov/uzyskaj-prawo-jazdy • Websites of individual examination centers • Websites of Driving Schools	*Statens vegvesen* website https://www.vegvesen.no/nn/forarkort/ta-forarkort/ (all rules, links, educational materials, etc.)

Source: own elaboration.

In addition to the differences in the driver education systems, there is also a distinct approach to road safety education and promotion in Norway. The country has placed significant emphasis on understanding the specific behaviours and skills of young drivers. This includes conducting analyses and detailed studies aimed at regularly revising regulations and educational programs. Special programs are developed specifically for young drivers.

An important target group for Norwegian road safety efforts also includes seniors. Similar to the approach with young drivers, detailed analyses and reports are created to assess the impact of age on driving. A significant initiative is offering seniors free two-day refresher courses—no exam required and no assessment of existing knowledge. The content of these courses is tailored to current needs. In Poland, there is a lack of systemic initiatives of this kind, including for young drivers.

In Norway, a significant emphasis is also placed on educating children about road safety, although this topic is also very popular in Poland. Overall, promotion and education related to road safety are pursued in both countries on many levels, for various target groups, and take many forms. There are also institutions specializing in this area, both public and private, Polish and Norwegian, with the leading roles being played by the Polish National RTS Council and the Norwegian *Trygg Trafikk*. The scale of various types and reaches of informational campaigns in both countries is also very large.

3.3. Safety of Vulnerable Road Users

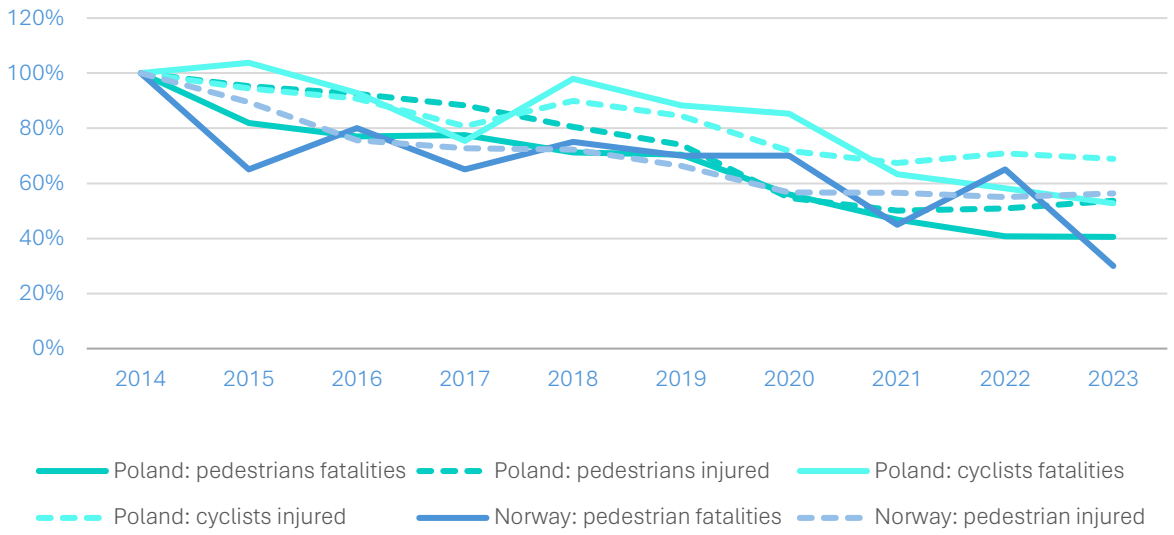
Vulnerable Road Users (VRUs) are the group most at risk of severe consequences in road accidents. Unfortunately, they are also often the perpetrators of such accidents. Although pedestrians, cyclists, and other VRUs are not the largest group of accident victims, the potential severity of their injuries, combined with their limited ability to influence their involvement in an accident, means that significant efforts must be made to reduce the number of accidents involving them. Statistics regarding this issue in Poland and Norway, like general road safety statistics, are highly variable, but there are certain similarities. In both countries, most accidents involving pedestrians occur in built-up areas, on lower-class roads (county and municipal roads), in the afternoon, under good (daylight) illumination, during the middle of the week, and in the autumn-winter months, at pedestrian crossings.

Table 4. Number of accidents, fatalities, and injuries in Poland and Norway from 2014 to 2023 involving pedestrians or cyclists

	Poland						Norway					
	Pedestrians			Cyclists			Pedestrians			Cyclists		
	Accidents	Fatalities	Injuries	Accidents	Fatalities	Injuries	Accidents	Fatalities	Injuries	Accidents	Fatalities	Injuries
2014	9106	1127	8592	4850	292	4736	583	20	598	n/a	n/a	n/a
2015	8581	923	8188	4634	303	4473	526	13	535	n/a	n/a	n/a
2016	8461	868	7947	4737	271	4298	446	16	452	n/a	n/a	n/a
2017	8197	873	7587	4212	220	3824	423	13	435	n/a	9	402
2018	7548	803	6918	4712	286	4259	420	15	432	n/a	7	414
2019	7005	793	6361	4426	258	3999	387	14	397	n/a	n/a	n/a
2020	5235	631	4700	3768	249	3403	335	14	339	n/a	5	488
2021	4755	527	4304	3513	185	3192	326	9	338	n/a	4	451
2022	4762	460	4367	3685	170	3356	326	13	329	n/a	6	293
2023	4943	457	4609	3596	154	3264	311	6	337	n/a	6	296

Source: own elaboration based on: *Wypadki drogowe w Polsce w 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 i 2023 roku*, Komenda Główna Policji, Biuro Ruchu Drogowego, Warsaw; *Årsrapport 2017, 2018, 2020, 2021, 2022 i 2023*, Statens vegvesen. Transport og Samfunn. Trafikksikkerhet. Lillehamer; *Fotgjengerulykker 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 i 2023*; Statens vegvesen. Transport og Samfunn. Trafikksikkerhet. Lillehamer.

Figure 6. Trend in the number of victims among pedestrians and cyclists from 2014 to 2023



(No data available for Norwegian cyclist casualties)

Source: own elaboration based on: *Wypadki drogowe w Polsce w 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 i 2023 roku*. Komenda Główna Policji. Biuro Ruchu Drogowego. Warsaw; *Årsrapport 2017, 2018, 2020, 2021, 2022 i 2023*. Statens vegvesen. Transport og Samfunn. Trafikksikkerhet. Lillehamer; *Fotgjengerulykker 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022 i 2023*. Statens vegvesen. Transport og Samfunn. Trafikksikkerhet. Lillehamer.

Changes in casualty numbers in Poland and Norway occur at a similar pace. The reduction in the number of cyclist casualties in Poland is slightly slower compared to pedestrian statistics. At the same time, in both countries, there is noticeable variability in trends—there are years where the figures are higher than in previous years. Nonetheless, the overall trend indicates a long-term improvement in road safety for pedestrians and cyclists, both in Poland and Norway.

In Poland, most accidents involving pedestrians and cyclists were caused by drivers of passenger cars who failed to yield the right of way or improperly navigated pedestrian crossings or cycle paths.

It is worth noting that in Norway, significant attention is given not only to the maintenance and upkeep of roadways but also to sidewalks and cycle paths. Such standards help maintain a higher level of safety for unprotected road users compared to the situation in Poland.

3.4. Vehicles

The vehicle fleet in a given country does not statistically correlate with the achieved road safety indicators. However, factors such as the age of the vehicles, their technical condition, and their equipment (e.g., automatic safety systems like blind spot monitoring or automatic braking) significantly impact not only the occurrence of accidents but also their severity, affecting drivers, passengers, and pedestrians alike. Newer vehicles, which are equipped with increasingly advanced autonomous safety systems, are generally safer for all road users, including pedestrians involved in accidents. Conversely, older vehicles might have poorer lighting or more deficiencies in this aspect compared to new cars. In Poland, inadequate lighting is the leading cause of road accidents involving vehicles with deteriorated technical conditions.

The sheer number of cars in a given country can only indirectly indicate the level of road safety. A higher number of vehicles leads to increased traffic, which in turn potentially raises the probability of accidents or collisions.

Figure 7. Number of passenger cars in the years 2013–2022

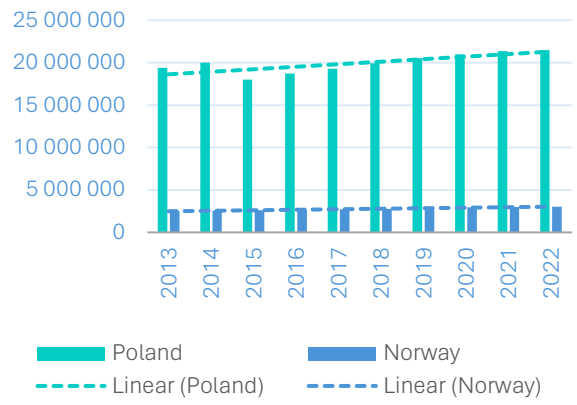
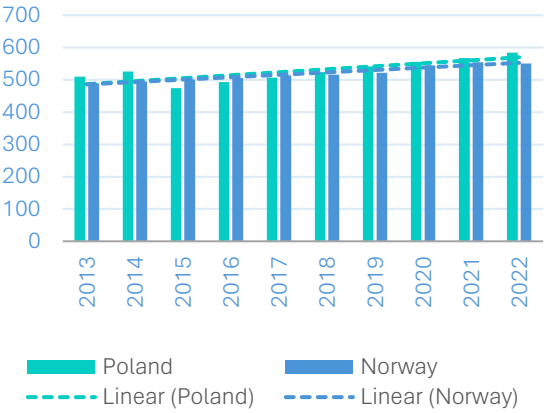


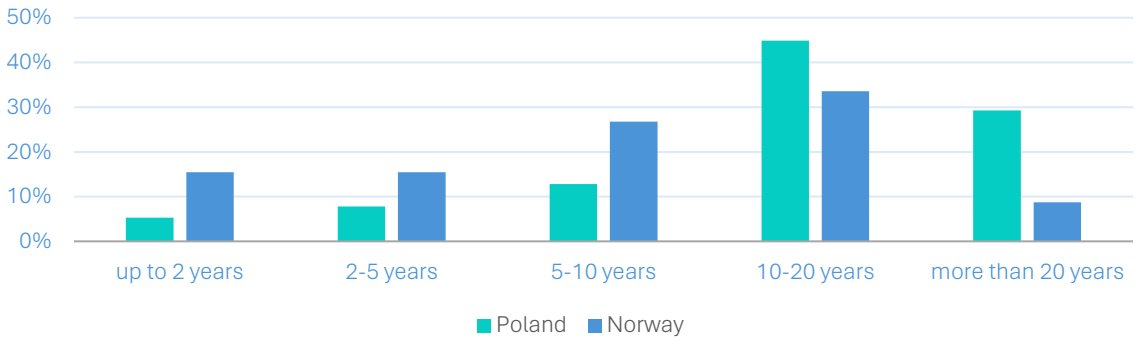
Figure 8. Motorization rate in the years 2013 – 2022



Source: own elaboration based on Eurostat data.

It turns out that while the number of passenger cars in Poland is significantly higher than in Norway, the motorization rate, i.e., the number of cars per 1,000 people, is very similar in both countries, with a nearly identical slight upward trend. What distinguishes Norway from Poland in this regard is the statistical age of vehicles. **Norway has a notably higher proportion of new and nearly new vehicles (0-10 years old) on the roads, and a much lower proportion of the oldest vehicles (over 10 years old) compared to Poland.** This suggests that vehicle reliability in Poland may be lower, and simultaneously, the quality and level of safety equipment might be inferior, which could directly impact the level of road safety.

Figure 9. Age of passenger cars in 2022



Source: own elaboration based on Eurostat data.

3.5. Road conditions

According to GUS data, as of the end of 2022, Poland had 427,580.3 km of public roads. These include: national roads: 19,459.5 km, provincial roads: 29,597.4 km, county roads: 124,210.5 km, municipal roads: 254,312.9 km. Roads are also categorized functionally and technically into intercity roads and streets, and by class (A – motorway, S – expressway, GP – main road with accelerated traffic, G – main road, Z – collector road, L – local road, D – access road).[8]

Information on the state of roads in Poland is scattered. The only systematic presentation comes from GDDKiA (General Directorate for National Roads and Motorways), which annually prepares a report on the technical condition of the national road network for the previous year. As of the preparation of this report, the most recent available report pertains to 2022. It includes data on the national road network managed by GDDKiA, covering 17,792 km (22,721 km for single carriageways) and concessionaires – including sections of motorways A1, A2, and A4 totalling 472 km (940 km for single carriageways). It does not cover sections of national roads not managed by GDDKiA, such as those running through cities with county rights, excluding expressways (class S) and motorways (class A). The aggregated data is used by GDDKiA to classify the road surface condition into levels: desirable, warning, and critical.

By the end of 2022, among the national roads managed by GDDKiA and the motorway concessionaires, 59% were identified as being in good condition (13,961 km), 25.7% in unsatisfactory condition (6,080 km), and 13.2% in poor condition (3,050 km).

GDDKiA assesses that the technical condition of the national road network it manages has been systematically improving in recent years, although in 2022 a slight decrease (1.4%) was recorded compared to the previous year. The General Directorate also notes that the results of the functional assessment of technical condition (i.e., parameters affecting driving comfort and road safety conditions) are better than the overall assessment of the technical condition of the roads it manages. By the end of 2022, 63.7% of the roads managed by GDDKiA were in good condition from this perspective.[9.]

Table 5. Condition of the Polish national roads surface in selected years in 2001–2022 (in %)

	2001	2002	2003	2004	2005	2016	2017	2018	2019	2020	2021	2022
Good condition	28.5	37.0	40.1	45.5	48.9	51.8	58.1	59.3	61.7	59.6	60.8	59.4
Unsatisfactory condition	37.5	33.4	30.3	28.7	26.2	31.1	26.0	23.4	22.7	24.0	23.8	24.7
Poor condition	34.0	29.6	29.6	25.8	24.9	16.9	14.5	14.8	13.3	13.9	13.5	14.7

Data source: *Raport o stanie technicznym nawierzchni sieci dróg krajowych na koniec 2022 roku*, GDDKiA, March 2023.

[8] Specified in the Regulation of the Polish Minister of Infrastructure of June 24, 2022, regarding technical and construction regulations for public roads.
[9] *Raport o stanie technicznym nawierzchni sieci dróg krajowych na koniec 2022 roku*, GDDKiA, March 2023, p. 23.

According to data from Statistics Norway (*Statistisk sentralbyrå*, SSB), in 2023, Norway had a total of 197,840 km of roads. These include: national roads – 10,539 km (managed by the Norwegian Public Roads Administration), county roads – 44,776 km (managed by counties), municipal roads – 40,047 km (managed by municipalities), and private roads – 102,478 km (managed by private owners).

Table 6. Length of roads by category in Norway for the years 2015–2023 (in km)

	2015	2016	2017	2018	2019	2020	2021	2022	2023
National (*riksveier*)	10,666	10,695	10,683	10,711	10,757	10,501	10,522	10,556	10,539
County (*fylkesveier*)	44,497	44,541	44,622	44,639	44,688	44,701	44,730	44,771	44,776
Municipal (*kommunal veier*)	39,287	39,406	39,457	39,543	39,721	39,477	39,843	39,940	40,047
Private (*private veier*)	96,318	97,169	97,899	98,316	98,770	100,030	100,768	101,780	102,478

Data source: https://www.ssb.no/en/statbank/table/11842/tableViewLayout1/ (accessed: July 10, 2024).

On county roads, approximately 50% of all road traffic in Norway takes place. About 15% of all roads in this category have an allowable axle load of less than 10 tons, and around 39% are in poor or very poor technical condition.

Table 7. Condition and selected characteristics of county roads in Norway in the years 2015–2023

Share of the total county road network	2015	2016	2017	2018	2019	2020	2021*	2022*	2023
- Sections in poor or very poor technical condition	43.9%	42.2%	40.8%	42.5%	39.9%	33.6%	19.6%	23.4%	39.2%
- Sections with allowable axle load < 10 t	22%	20%	19%	18%	18%	17%	17%	16%	15%
- Sections with allowable vehicle weight > 50 t	5%	5%	5%	5%	4%	4%	4%	4%	3%

* Note: data unavailable for some counties.
Data source: https://www.ssb.no/en/statbank/table/11842/tableViewLayout1/ (accessed: July 10, 2024).

According to GUS data, in 2022, Poland had a total of 38,793 bridges and viaducts, of which 38,646 were permanent structures. The highest number of such structures is in Lower Silesian (5,300), Lesser Poland (4,500), and Silesian (4,300) voivodeships. This is due to both the landscape conditions (a significant number of rivers and elevations) and the density of transportation infrastructure (road and rail networks). Out of the forementioned number of bridge structures, GDDKiA manages 9,789 bridges located on national roads and motorways. Their total length is approximately 555 km and their surface area is about 8.1 million m^2. The average age of a bridge managed by GDDKiA is 19 years, but over 80% of such bridges were built in 2000 or later. Since 2002,

the number of bridges on national roads has increased by 80%, due to the development of the primary network of expressways.[10]

According to GUS data, in 2022, Poland had 792 tunnels and underground passages. Of this number, as many as 622 (about 79%) were located in urban areas. Due to the relatively flat terrain of most of the country and the high costs of constructing such infrastructure, the number of road tunnels in Poland, especially the longer ones, is relatively small. However, the number of tunnels on the Polish road network has been increasing in recent years, and more are planned for construction. Among the longest tunnels are: the S19 Jawornik – Lutcza tunnel (3000 m), the Zakopianka (S7) tunnel under Luboń Mały (2058 m), the Ursynów (S2) tunnel in Warsaw (2335 m), and the Świna tunnel in Świnoujście (1780 m). Tunnels currently under construction include: the S3 Kamienna Góra – Bolków tunnel (2000 m) and the S19 Rzeszów Południe – Babica tunnel (2250 m). Planned tunnels include the S6 western bypass of Szczecin (5003 m) and two tunnels on expressway No. 7 Kiełpin – Warsaw (1000 and 1122 m).

Due to the country's terrain, the use of various types of engineering structures on the road network in Norway is significant. Thus, the importance of road bridges, viaducts, and tunnels is much greater than in Poland. In the Kingdom of Norway, there are approximately 17,000 bridges on the national and county road networks, with about 12,300 of them located on county roads, according to SSB data (12,296 in 2022 and 12,316 in 2023).

The age and technical condition of road bridges in Norway are highly variable—some are over 100 years old. According to data published by *Statens vegvesen* in April 2022, [11] approximately 5,300 of these bridges have damages that could have "significant consequences" for road safety. The main causes are advancing corrosion and cracked guardrails. This number includes 342 Norwegian road bridges located on national and county roads that have suffered such significant damage that their continued use may pose "serious consequences" for road safety. Design errors, as well as a lack of proper diagnosis by the road infrastructure manager, led to the collapse of a 150-meter bridge in Tretten (Innlandet County) in August 2022. A similar incident occurred in February 2016 when a bridge in Perkolo (also in Innlandet County) collapsed.

Regardless, *Statens vegvesen* has designated 21 of the most important road bridges in the country, which are covered by a notification system about road conditions affecting this infrastructure. These notifications are sent to drivers through the mobile app of the Norwegian national road and highway authority. The majority of these bridges are located in the counties of Nordland, Troms, and Finnmark (8 bridges) and in Rogaland and Vestland (also 8 bridges). [12]

Norway is among the world leaders in the number of road tunnels, surpassed only by China and Japan—countries with much larger land areas and road networks. It is also home to the longest road tunnel in the world, the Lærdal Tunnel, which spans over 24.5 km. Built between 1995 and 2000, this tunnel allows for travel from Oslo to Bergen via the European route E16 without the need for a ferry.

[10] Data based on: *Obiekty inżynierskie – technologia, realizacja a koszty utrzymania*, GDDKiA 2023.
[11] https://www.finansavisen.no/nyheter/transport/2022/04/12/7850744/5.600-norske-broer-har-skader-som-truer-trafikksikkerheten?zephr_sso_ott=a0Vach (accessed: July 16, 2024).
[12] https://www.vegvesen.no/trafikkinformasjon/reiseinformasjon/varsling/tunneler-bruer-og-veistrekninger-du-kan-fa-varsel-om/ (accessed: July 16, 2024).

Norway has over 1,200 road tunnels,[13] a reflection of its mountainous terrain, rugged coastline, and the need to protect certain routes from adverse weather conditions such as snowdrifts, landslides, and avalanches. Additionally, the country's wealth plays a significant role; expensive tunnels are often constructed to connect relatively small towns safely, sometimes by going through mountains rather than around them.

Tunnel management involves ensuring high standards of safety and functionality. *Statens vegvesen* (SV) has developed a tunnel management system (Norwegian: *Trygg tunnel*) for collecting data on tunnel conditions and monitoring their compliance with regulations. The system also records accidents and fires occurring in tunnels. *Statens vegvesen* is required to report the number and types of these incidents to the EU every two years through the EFTA Surveillance Authority.

Since 2015, efforts have been underway to improve safety in tunnels longer than 500 meters, built on Norwegian national roads before 2007.[14] Approximately 200 such tunnels have been identified. The modernization aims to meet the requirements of the EU Directive 2004/54/EC, which is mirrored by a specific regulation from 2007 concerning minimum safety requirements for tunnels of the mentioned length.[15] For each tunnel, a detailed modernization plan has been created, covering aspects such as fire ventilation, control systems, lighting, and improvements in water and frost protection.

3.6. Safety at railway crossings

The condition of a total of 12,098 railway crossings in Poland (as of 2022)[16] is managed by PKP Polskie Linie Kolejowe S.A. Based on relevant regulations, they are divided into several categories – from A to D – depending on the level of safety measures implemented.[17] The majority are classified as category D (5,225, 45% in 2022) – without traffic control systems. Crossings with the highest level of safety measures (category A) number 2,194 (18%).

Road-rail crossings in Norway fall under the responsibility of Bane NOR – a government agency responsible for the management, maintenance, and development of the Norwegian railway network. The safety oversight of these crossings is managed by SJT (*Statens jernbanetilsyn*), the government authority overseeing the operation of rail transport in the country. Both entities report to the Norwegian Ministry of Transport and Communications.

According to Bane NOR, there are 3,185 road-rail crossings and passages throughout the country, of which just under half, 1,634, are on active railway lines with train traffic. Among these locations, only 21% (349 crossings) have active safety systems – barriers and/or signal lights and sounds. The remaining 1,251 crossings, located on roads with lighter traffic, are secured only with road signs.

[13] The exact number is difficult to determine because different sources provide varying figures. Approximately 1,200 road tunnels are listed on the official online map of *Statens vegvesen* (https://vegkart.atlas.vegvesen.no/), but other sources report numbers close to 1,500 tunnels. This discrepancy is likely due, in part, to double-counting of twin-tube tunnels.
[14] https://www.vegvesen.no/vegprosjekter/tunnelutbedringsprosjekter/ (accessed: July 17, 2024).
[15] *Forskrift om minimum sikkerhetskrav til visse vegtunneler (tunnelsikkerhetsforskriften)*, May 15, 2007 (https://lovdata.no/dokument/SF/forskrift/2007-05-15-517, accessed: July 17, 2024).
[16] This number is provided by the Office of Rail Transport on its website; however, the 2022 Safety Report issued by UTK states that there are 12,052 level crossings in Poland.
[17] Regulation of the Polish Minister of Infrastructure and Development of October 20, 2015, on the technical conditions that level crossings and railway sidings must meet, and their location.

Crossings with active safety measures are typically found on national and county roads, while passive ones are most often on private roads.

In Norway, there are four times fewer level crossings than in Poland, but this number, when adjusted for the length of the railway network, is the highest among EU and EFTA countries. In 2022, there were an average of 86.5 level crossings and railway crossings per 100 km of railway line in Norway. In comparison, this indicator for Poland was 62.3. However, these figures likely do not account for the fact that a significant portion of Norwegian crossings are on railway lines that are no longer in operation.

In 2022, Norway had a total of 2,878 passive level crossings and railway crossings (on both active and inactive railway lines), which averaged 73.7 such locations per 100 km of the railway network. In comparison, this value in Poland was 31.8.

Table 8. Number of passive level crossings and railway crossings in Poland and Norway in 2022

	Number of passive level crossings and railway crossings	Length of railway network	Average number of passive crossings per 100 km of railway line
PL	6151	19,355 km	31.8
NO	2878	3,907 km	73.7

Data source: Eurostat.

In Norway, the level of safety measures for individual level crossings and railway crossings is regulated by appropriate regulations and depends, among other factors, on whether they are located on municipal roads, county roads, private roads (with differentiation between roads leading to a larger or smaller number of homes or commercial areas), in closed industrial zones, on forest roads, and agricultural crossings.[18]

The most effective way to prevent accidents at level crossings is to replace them with grade-separated crossings. In this solution, the railway line or road is placed on a bridge or in a tunnel. As a result, from 2018 to 2022, the number of level crossings in Poland decreased by 704. However, this solution is quite costly and, for various reasons, not feasible at every location. Therefore, another method to improve safety in this area is the modernization of level crossings, allowing for the upgrading of their categories, most commonly from category D to B and C. In 2018, level crossings with active safety measures accounted for 42% of the total, while in 2022, this figure had risen to approximately 49%.

In Norway, attention is drawn to the long-standing policy of the country's railway infrastructure manager, which aims to reduce the number of existing level crossings on the network.[19] Since 2006, Bane NOR has not created any new level crossings during the modernization, renovation, or construction of new railway sections. In recent years, the number of level crossings in Norway has been decreasing by an average of 25 annually. The long-term goal is to eliminate all level crossings and replace them with tunnels and bridges. Currently, there are no level crossings on dual-track or

[18] Details: https://trv.banenor.no/wiki/Overbygning/Vedlikehold/Planoverganger/Vedlegg/Skilting_av_planoverganger (accessed: July 8, 2024).
[19] In comparison, in 1950, Norway had as many as 8,600 level crossings.

multi-track lines (8% of the entire network) or on sections where trains reach speeds over 160 km/h. The core of Norway's infrastructure policy in this area is thus to eliminate the risk of intersecting railway lines and roads at the same level.

Table 9. Number of accidents and victims at level crossings in Poland and Norway from 2013 to 2023

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Number of accidents:											
PL	255	216	208	212	214	215	199	169	216	181	190
NO	3	2	3	0	2	3	1	2	1	3	b.d.
Number of victims:											
PL	52	43	53	48	42	49	60	47	48	41	39
NO	2	1	1	0	3	1	0	1	0	1	b.d.

Data source: *Statens Jernbanetilsyn*, Polish Rail Transport Office (UTK) and Eurostat.

The number of accidents and collisions occurring at level crossings and railway-road crossings in Poland remains a significant social issue—99% of these incidents are attributed to driver error. On average, about 11 incidents and hazardous situations are recorded daily, which could potentially result in accidents at crossings.

In 2023, Poland experienced 190 accidents at level crossings, resulting in 39 fatalities. Despite a decreasing trend since 2019, there is no significant reduction in the annual number of fatalities from level crossing accidents when considering a broader time frame (since 2015).

In contrast, Norway recorded only 3 accidents at level crossings in 2022. This was the highest number since 2018, which also saw 3 accidents. In 2016, the rate was zero. A similar disparity is observed in the number of fatalities from level crossing accidents between the two countries. In Norway, one person died in such accidents in 2022. No fatalities were reported in 2021, 2019, or 2016. The highest number of fatalities in Norway occurred in 2017, with 3 deaths recorded.

3.7. Road safety culture

The concept of **safety culture** in literature has various meanings depending on the subject of analysis, the area of action, and the scientific discipline. In our context, we are interested in road safety culture. **It can be analysed on three levels: social, organizational, and individual.**

We define **road safety culture** as the widely accepted and crucial ways of behaving in road traffic, the common adherence to norms concerning such behaviour, and the expectation that other road users will behave safely in traffic, just as we do.[20] This definition pertains to both the macro level, i.e., social, and the micro level, i.e., organizational and individual. Road traffic culture can be

[20] Nævestad, T.-O., Phillips, R., & Storesund Hesjevoll, I. (2018). "How can we improve safety culture in transport organizations? A review of interventions, effects and influencing factors". *Transportation Research Part F: Psychology and Behaviour, 54*, 28–46.

characterized as descriptive norms about how one should behave in road traffic.[21] Descriptive norms can influence the behaviour of vehicle operators by providing information on what behaviour is considered normal and what is not.[22]

When describing road safety culture as descriptive norms of behaviour, we theoretically assume that there is a role for social pressure in the mechanism linking culture (shared norms and expectations) with actual behaviour on the road.[23] This social influence often provides our understanding of what is "socially acceptable" and motivates us to behave in certain ways on the road, not always positively.

There is limited research on road safety culture. Therefore, there is a need for analyses concerning: mechanisms generating road safety culture in different socio-cultural contexts (nations, communities, peer groups, families); theories explaining the connections between culture and behaviour; and insights on how this knowledge can be used to develop effective interventions to improve road safety.

Research conducted so far has mainly focused on safety culture within road transport companies, often in commercial transportation. This report provides a broader perspective on this important social issue.

3.7.1. Social dimension

The most common moderators of road safety culture are society in the broadest sense of the term. On a macro level, a globalizing world fosters **migration movements**, which in turn leads to encounters between different cultures and their mutual infiltration, borrowing, and absorption of various attitudes, often negative when it comes to road safety. Poland is a transit country intersected by major road routes from west to east and from south to north. On our roads, we encounter drivers from all over Europe, with varying experiences, both good and bad, regarding road safety culture.

The road behaviour culture in "cold," northern European societies is significantly higher than that of the "hot" southern societies. Additionally, Western European societies are more sensitive to proper behaviour on the road compared to Eastern European countries. Furthermore, the degradation of road behaviour culture in Poland has intensified as a result of the war in Ukraine. Millions of refugees have found shelter in our country, bringing with them their own experiences of road behaviour culture—often far from the ideal.

At the micro level, factors shaping road safety culture include **urban and rural environments**. Polish experiences, as well as international studies, show that road safety culture is higher in urban areas and significantly lower in rural ones. Several reasons account for this state of affairs. Among the most frequently cited are the conditions of large cities—characterized by high traffic volumes and complex traffic situations that demand high driving skills. Drivers in urban areas also tend to have more experience due to the greater number of kilometres travelled.

[21] Cialdini, R. B., Reno, R. R., & Kallgren, C. A. (1990). "A focus theory of normative conduct: Recycling the concept of norms to reduce littering in public places". *Journal of Personality and Social Psychology, 58*(6), 1015–1026.
[22] Ibid.
[23] Ibid.

An important issue in the social dimension of road safety culture is **the state of sobriety in society, as well as attitudes towards psychotropic substances and drugs**. Alcohol consumption in Polish society has been steadily increasing, reaching levels not seen even during the PRL era. The consumption of high-proof beverages is rising; for example, it is estimated that Poles consume about 3 million miniature bottles (commonly known as "miniatures") daily, with around a million consumed before noon.[24] This situation is likely to impact road safety culture. It is expected that the number of road users driving under the influence of alcohol in Poland will continue to rise systematically.

A very similar situation occurs with **driving under the influence of drugs**. There is still a lack of precise estimates on this issue because the sale of these substances occurs in the illegal market. It can be assumed that, like alcohol consumption, drug-related crime is also increasing.

The social dimension of road safety culture also involves analysing it from the perspective of **generational cohorts**, connected by a shared awareness of their experiences, similar attitudes, goals, and principles in interpreting reality.[25] **As a social category, these generational groups are important moderators of behaviour on the road**. The sense of social responsibility differs between Generation X and Y compared to Generations Z and Alpha,[26] which has implications for shaping road safety culture. For example, for Generation X and Y, refraining from phone conversations or using mobile devices while driving is not a problem, whereas for Generations Z and Alpha, it is nearly impossible. This issue extends beyond the limitation of using personal digital devices or vehicle-installed equipment (autonomous vehicles) while driving, to also include the tracking of non-travel-related digital communications in the driving environment.

In the social dimension of building a proper road safety culture, it is also crucial to address the **modelling of unacceptable behaviours**. Peer groups, various opinion leaders, and road safety experts play a significant role in this regard. Any inconsistencies in this area, such as advocating views that align with societal demands but not reflected in actual behaviour, hinder the creation of a positive environment around road safety culture.

The social dimension of building an effective road safety culture is challenging to implement because it involves macro-scale influence and encompasses numerous environments. It is also a process linked to the interaction of many components (educational, legislative, implementation of solutions, etc.) and requires continuous monitoring of outcomes. Supporting tools for this process can include mass media, social media platforms, educational institutions, and programs promoting road safety, among others.

[24] Krajowe Centrum Przeciwdziałania Uzależnieniom. *Raport 2023. Uzależnienia w Polsce*. Warsaw: *2023*.
[25] Mannheim, K. "Das Problem der Generationen." *Kölner Vierteljahrshefte für Soziologie* 7 (1928): 11–330.
[26] McCrindle, M., and Wolfinger E. *The ABC of XYZ: Understanding the Global Generations*. Bella Vista NSW: McCrindle Research Pty Ltd., 2014, p. 5.

3.7.2. Organizational dimension

The analysis of road safety culture from an organizational perspective addresses both institutions and organizations that have been legally established to promote safety, as well as those whose primary functions do not focus on road safety but could still contribute to the process.

Firstly, the analysis should start with **educational institutions** such as schools and their environment, which includes not only students as the primary target group but also teachers, parents, and the local government. According to some contemporary educators, schools should contribute to shaping the foundation of a modern personality, even on a mass scale.[27] The role of schools is also crucial in the context of developing road safety culture. One of the key issues is raising awareness among students and society that while the car represents a significant advancement in human civilization, it also carries substantial potential risks. To achieve this, actions within schools need to be systematic. It is essential to develop a comprehensive action plan detailing specific issues to be addressed and methods for their implementation. Road safety education must be considered by educators as important as other subjects taught in school.

A correct model for building a culture of safe behaviour in road traffic by educational organizations also involves educating students about the consequences of ignoring and disregarding seemingly simple and obvious road rules and teaching them how to handle difficult situations and anticipate potential hazards. This process requires broad **collaboration between the school, parents, and various local organizations**. Presenting alternative views on road safety culture outside of school by parents, especially in the presence of their child, or behaving contrary to good practices, can create doubts among the educated group about the validity of these ideas. Research confirms that parents remain effective in modelling young people's behaviour in road traffic.

Local government should also actively participate in shaping the road safety culture. In our country, local government units (LGUs) are not statutorily assigned tasks in this area, but this does not mean that such actions are not undertaken. However, these actions are not widespread. Much of this depends on the initiative and efforts of individuals who see the need for such measures.

An organization that has been one of the most effective in Poland in building a good model of road safety culture is **the Police**. Its scope of influence is broad. Potential additional expectations from this organization would involve intensifying activities related to preventive measures. Increased police presence on the roads, not necessarily associated with penalizing users, would—according to studies—increase drivers' vigilance and calm tendencies to disclose secondary motives for their behaviour.

Another important organization that should actively participate in building a good model of road safety culture is **driving schools and Driver Training Centres** in Poland, which are in urgent need of reform. The current model, which mainly focuses on vehicle operation training, is insufficient. Similarly, the number of hours allocated for this training is inadequate. Meanwhile, knowledge of legal regulations defining proper behaviour in road traffic should be comprehensive and systematically updated in line with new legal amendments. In most Driver Training Centres,

[27] Schultz, D. P., Schultz S.E. *Psychologia a wyzwania dzisiejszej pracy*. Warsaw: 2002.

education mainly focuses on practical driving skills, treating theoretical knowledge as something to be learned independently. An important aspect of education should be the development of proper attitudes and behaviour in road traffic, which is a crucial element of road safety culture.

A crucial organizational component in building an effective and safe road traffic model is **organizations employing professional drivers**. There are connections between safety culture within companies employing professional drivers and their safety performance (safety-related behaviours, accident risk).[28] [29] For example, a lack of tolerance for vehicle malfunctions or certain seemingly minor equipment issues from a road safety perspective positively influences drivers' attitudes. Additionally, systematic practices involving thorough vehicle inspections, which are endorsed within a company, contribute to building a road safety culture—studies have shown that such practices can reduce accident risk by up to 60%.[30]

In the discussion about road behaviour culture, it is difficult to overlook the role of **the family**. The family has the strongest influence on shaping the attitudes of young people, including those related to road safety. Although contemporary families have been significantly impacted by globalization, industrial, and digital revolutions, they still play a crucial role in the upbringing process. Research in Norway has confirmed that parents continue to be significant role models for their children regarding road behaviour.[31] The effects of this influence vary depending on which parent is seen as an authority by the children. For instance, mothers often model road behaviour mistakes for their children, which are later repeated in adulthood by both girls and boys. Conversely, fathers are more likely to be sources of behaviour such as traffic violations, aggression, and speeding. When creating an effective road safety model, it is important to give more attention to this institution.

3.7.3. Individual dimension

The issue of road safety culture on an individual level is linked to the propensity for risk-taking in road traffic. Among the factors that may potentially hinder the process of building a road safety culture model, **tendencies towards risky behaviours**, as well as **impulsivity and aggression**, appear to be of crucial importance. Eliminating these factors is very challenging because they are components of individual dispositions and have genetic underpinnings.

The propensity for risky behaviours is a deliberate action by road users. Its activation in road traffic results from a subjective assessment of the situation, where the perceived benefits of engaging in behaviour that exceeds norms outweigh potential losses. For instance, driving significantly faster through built-up areas than allowed by regulations may seem advantageous because daily experience shows that the police are rarely present there. Paradoxically, someone who tries to adhere to the model of correct road behaviour in such circumstances (especially among younger people) will be perceived as irrational. The modern individual, as discussed in the context of

[28] Cooper, M. D., & Phillips, R. A. (2004). "Exploratory analysis of the safety climate and safety behavior relationship". *Journal of Safety Research*, 35, 497–512.
[29] Huang, Y. H., Chen, P. Y., & Grosch, J. W. (2010). "Safety climate: New developments in conceptualization, theory, and research". *Accident Analysis and Prevention*, 42, 1421–1422.
[30] Gregersen, N. P., Brehmer, B., & Morén, B. (1996). "Road safety improvement in large companies: An experimental comparison of different measures". *Accident Analysis & Prevention*, 28(3), 297–306.
[31] Summala, H. (2007). "Towards understanding motivational and emotional factors in driver behaviour: Comfort through satisficing". P. Cacciabue (Ed.), *Modelling Driver Behaviour in Automotive Environments* (pp. 189–207). Springer Verlag.

generational models, is someone who is well aware of their surroundings and optimally utilizes favourable circumstances to achieve success.[32] Those who do not leverage these circumstances and fail to fit this model are viewed as maladaptive or out of touch, like someone from another world. Therefore, members of generational cohorts X and Y demonstrate a significantly higher level of road safety culture compared to the younger generations Z and Alpha, who perceive everyday life in global terms, with the principle that opportunities, if present, should be seized immediately.

Another factor that complicates the process of ensuring safe road traffic is **impulsivity**. This concept lacks a definitive definition in psychology and is often understood differently, but it always involves unconsidered behaviour. Impulsive individuals make up approximately 14% of the human population, which means that about one in six road users may exhibit impulsive driving traits. Such individuals often struggle to plan their actions and, as discovered in recent years, to anticipate the consequences of their behaviour.[33] On the road, they frequently act contrary to established norms. They are easily provoked, reacting explosively and inappropriately to situations, often displaying intense aggression.

Aggressiveness is another trait that hampers normal functioning and its manifestation in road traffic does not contribute to a culture of efficient and safe movement. However, unlike risk-taking and impulsivity, aggressiveness does not have the status of an individual trait. It is often a consequence of personal experiences. One such experience is frustration—a state of emotional and cognitive distress that occurs when an individual cannot achieve a goal through no fault of their own. Road traffic is a common context for aggressive behaviours, even though the actual source of frustration may lie elsewhere (e.g., at home, at work, or at school). The car and the sense of anonymity provide a feeling of safety, making it easier to "activate" aggression. This aggression often arises in response to provocations from other road users, such as slow driving, forcing the right of way, cutting off, or slow starts. Such behaviours, although often within the bounds of acceptable road conduct, are perceived as impediments by drivers experiencing frustration.

Road rage definitely cannot be considered part of a culture of proper behaviour in traffic. However, unlike risk-taking or impulsivity, it is possible to control and model aggression. It would be worth considering the inclusion of anger management training within driver education programs, as well as skills for coping with this emotional state.

In the individual dimension of road safety culture, **gender and age** are also relevant factors. Regarding gender, women generally exhibit a higher adherence to traffic norms compared to men. The influence of age, on the other hand, is more complex. For a long time, young drivers were considered the highest risk group and thus exhibited the lowest level of safe behaviour. However, this stereotype has shifted in recent years, with older drivers (aged 60 and above) increasingly being recognized as a high-risk group as well. It's important to note that both age groups require different approaches when it comes to fostering appropriate attitudes within road safety culture.

[32] Bauman, Z., *Życie na przemiał*. Kraków, 2004.
[33] Swann, A. C., Lijffijt, M., Lane, S. D., Steinberg, J. L., & Moeller, F. G. (2009). "Increased trait-like impulsivity and course of illness in bipolar disorder". *Bipolar Disorders*, 11(3), 280–288.

3.7.4. Road safety culture – Polish and Norwegian approaches

As mentioned earlier, the issue of road safety culture is relatively new, and in this area, Scandinavian countries, including Norway, are undeniable leaders. The following table presents a comparison of the key aspects of this issue between the approaches used in Poland and Norway.

Table 10. Comparison of key aspects of road safety culture in Polish and Norwegian approaches

Comparative element	Poland	Norway
Developed Action Program	None	Yes
Program guidelines	None (general accident report)	Yes (detailed and justified why they are important)
Program goal	Yes. Vision Zero.	Yes. Vision Zero (intelligent transport, priority for public transport, promotion of cycling, sustainable societal development, responsibility of local governments and transport company managers for safety).
Target group	General information (transport companies, especially vehicle inspection station employees)	Specific indications: • Local governments (municipalities) • Preschools and schools • Transport company managers • Transport companies • Public transport
Program content	None	Detailed description for each target group
Mission and Strategy	None	Thoroughly presented
Program implementers	Police, GDDKiA, Military Police, Border Guard, National Road Transport Inspectorate	Municipalities, schools, and institutions: Police and SV
Education locations	No information	Nurseries, preschools, primary and secondary schools, local governments, social welfare centres
Measuring results	Described in general terms: reduction in road accidents, increased knowledge about safety among road users, higher awareness of road safety, and promotion of safe attitudes and behaviours of road users.	Experiments testing the effectiveness of education

Source: own elaboration.

The comparison of the two analysed countries shows the broad range of issues related to safety culture that are addressed in Norway. As previously mentioned, the initial emphasis was placed on activities within transport companies to make managers aware that not only drivers but also they are responsible for safety. Detailed descriptions cover how transport management should be handled, the assistance provided to drivers, support in crisis situations related to road traffic, and more. In Norway, municipalities and even centres for immigrants are also involved in the process. Local authorities are particularly sensitized to how transport planning should be conducted, focusing on the needs of vulnerable road users. Great attention is given to pedestrian paths, bike lanes, and routes designated for quad traffic.

Due to the significant influx of migrants to Norway in recent years, educational initiatives on road safety culture are also planned for this group.

In Poland, efforts to shape road safety culture, besides widespread education, mainly focus on the technical inspection of heavy vehicles and the training of employees at Vehicle Inspection Stations. Some aspects of this issue are also addressed through legislative measures, which include regulations on professional drivers' working hours, rest periods, and the technical requirements for heavy vehicles allowed on the road. Although there are elements of safety culture in Polish initiatives (such as post-accident rescue), they are scattered across various documents and become less visible due to their disorganization.

Selected actions related to shaping road safety culture are primarily implemented by the Police, the Secretariat of the National RTS Council, Provincial RTS Councils, private associations, insurance agencies, and the media.

Tasks related to RTS culture should primarily be carried out by entities other than the Polish Police, which have many other responsibilities primarily concerned with the safety of citizens. When it comes to traffic education regarding behaviour in road traffic, the role of the Police should be limited to, at most, supporting this process. Traffic education – as a fundamental task – should be entrusted to educational institutions, similar to the approach in Scandinavian countries, particularly in Norway. It should take the form of systematic teaching, akin to other school subjects. This process should involve not only local governments (municipalities, counties) as the bodies managing schools, but also institutions overseeing the implementation of the education framework, particularly educational authorities. This process should be supported by various associations engaged in traffic education issues. While there are many such associations in Poland, their activities are dispersed, and the results of their efforts are not very visible.

4

Diagnosis of the legal status of road safety

4.. DIAGNOSIS OF THE LEGAL STATUS OF ROAD SAFETY

4.1. Preliminary issues

Understanding the key legal and societal aspects of road safety culture in Norway is crucial for a comparative analysis with Poland. Three principal issues need clarification:

1) The legal system in Norway.
2) The mentality and societal response to road safety regulations.
3) Grassroots mechanisms for safeguarding road safety.

Grasping these elements will provide a clearer understanding of the differences between Poland and Norway in the field of BRD, allowing for more effective comparisons and recommendations.

4.1.1. The legal system in Norway

The Norwegian legal system is a unique blend of common law and statutory law. It includes statutory law, which is typical for continental European countries, and case law, characteristic of Anglo-Saxon legal systems. The rulings of the Norwegian Supreme Court (*Høyesterett*) are considered binding; however, in exceptional cases, a lower court may disregard such precedents through a process known as "anticipation overruling." The Norwegian Supreme Court is not bound by its own past rulings and can change its legal stance at any time. In many cases related to road traffic, the court's justifications for its decisions often recommend legal changes that influence the entire road safety management system.[34]

Given the absence of a constitutional court in Norway—such institutions exist in continental European countries (including Poland, where it is known as the Constitutional Tribunal of the Republic of Poland)—rulings of the Norwegian Supreme Court serve as a driving force for changes in road traffic safety (RTS) laws or modifications to existing legal frameworks.

Most of the legal acts concerning RTS in Norway take the form of statutes. The authority to introduce additional measures within the road safety management system—such as regulations, guidelines, recommendations, manuals, and advisories—based on statutory delegation, lies with the Traffic Police (*Utrykningspolitiet*, UP) and the Norwegian Public Roads Administration (*Statens vegvesen*, SV).

[34] For instance, in the Norwegian Supreme Court ruling of May 13, 2022, HR-2022-981-A (case no. 21-162994STR-HRET), the justification clearly indicated that the time had come to legally change the basis for converting fines into alternative imprisonment from 500 NOK to 1000 NOK per day. The case involved a fine imposed for a traffic offense that endangered road safety by blocking Oslo's Ring Road 1 for 90 minutes. As a result, § 3 of the Norwegian Act on On-the-Spot Fines for Traffic Offenses of 29 June 1990 (publisher: ZA-2024-01-26-119) was amended on February 1, 2023. Similarly, in the Supreme Court ruling of September 13, 2022, HR-2022-1753-A (case no. 22-020057STR-HRET), it was clarified that a person accused of leaving a vehicle with an intoxicated individual could not also be convicted for contributing to driving under the influence of alcohol (the Norwegian Supreme Court provides binding interpretations of laws concerning drivers under the influence of alcohol).

4.1.2. The mentality of Norwegian society and its response to traffic safety regulations

Another crucial issue is the mentality of Norwegian society and its reaction to directives aimed at drivers in the context of road traffic regulations. **In the authors' view, understanding this aspect is essential for examining the entire system of road safety management in Norway.** Analysing this matter requires delving into certain legal and historical conditions of the 19th and 20th centuries, concerning both Poland and Norway. As early as the turn of the 19th and 20th centuries, thinkers and philosophers, including legal philosophers, pointed out that the perception of law by individuals is often influenced by the extent to which, and the level at which, these nations have treated established norms generationally (inherited).[35]

Despite the fact that, within European culture—similarly for both Poland and Norway—the concept of "European legal culture" is defined as a syncretic whole composed of elements from ancient Greek, Roman, and Judeo-Christian traditions,[36] the "culture of respect for the law" among individuals in Poland and Norway develops differently. This divergence stems from historical conditions.

In Poland, the period from 1795 to 1918 was marked by partitions, during which laws, norms, and regulations were effectively imposed by the occupying powers (Prussia, Austria-Hungary, and the Russian Empire). The subsequent years, 1939 to 1945, witnessed the German occupation, where the totalitarian regime of the Third Reich enforced further prohibitions, imposed directives, and demanded obedience through restrictive norms that were not accepted by the general populace. The following period from 1945 to 1989 saw the functioning of the Polish state constrained by restrictions imposed by the communist regime, sustained in reality by the Union of Soviet Socialist Republics (USSR). This documented course of history and law enforcement is confirmed by both Polish[37] and European[38] historians. **Throughout all these periods (1795–1918, 1939–1945, 1945–1989), the consciousness of the Polish nation was shaped by the broadly understood *ius resistendi*, or the right to organised or individual disobedience towards the established legal norms.**

The imposed legal systems and methods of governance left a significant mark on the shaping of the Polish national consciousness, as well as on the perception of law as one of the mechanisms of oppression by the partitioning powers (Prussia, Austria-Hungary, the Russian Empire), occupiers (the Third Reich), and forced "allies" (the USSR). Often, the oppressive laws were specifically directed at individual members of the nation. This led to a limited trust in authority and a general criticism (frequently on principle) of the laws being introduced. History reinforced Polish distrust, training citizens more in a lack of respect for the law than in respect for it.[39]

The situation in Norway developed differently. Until 1814, Norway was in a union with Denmark, and from 1814 to 1905, in a union with Sweden. Importantly, during the latter period, the two countries

[35] Sztompka, P. *Zaufanie. Fundament Społeczeństwa*. Kraków, 2007, pp. 343–356; Sobiech, R. *Zaufanie do władz publicznych*, Warsaw, 2017, pp. 62–64. DOI: 10.4467/2543408XZOP.17.003.9262.
[36] Tokarczyk, R. "Kultura prawa europejskiego," *Studia Europejskie*, no. 1, 2000, p. 12.
[37] Roszkowski, W. *Historia Polski 1914–2015*. Warsaw, 2015; Bardach, J., Leśnodorski, B., & Pietrzak, M. *Historia ustroju i prawa polskiego*. 6th ed., Warsaw, 2010.
[38] Davies, N. *Europa. Rozprawa historyka z historią*. Oxford, 1996; Davies, N. *Boże igrzysko*. Kraków, 2023; Maciejewski, T. *Historia powszechna ustroju i prawa*. Warsaw, 2015.
[39] Łętowska, E. "Szacunek dla prawa i jego wrogowie," *Pismo. Magazyn opinii*, no. 7, 2018.

shared only a monarch, foreign policy, and consular services, while Norway independently handled its internal affairs (maintaining its own parliament, language, cultural identity, separate army, constitution, and legal system). In 1905, the personal union was dissolved, Norway left the union, and elected its own king. Except for the brief German occupation during World War II (1940–1945), Norwegians have shaped their legal system independently.[40] It was neither imposed nor forcibly modified by foreign powers, neighbouring countries, or empires. **As a result, the culture of respect for the law in Norway is far more developed than in Poland, as the tradition of cultivating respect and adherence to the law has existed there for at least 250 years.** In contrast, in Poland, the process of building citizen trust in public authorities, legal awareness, and the duty to obey the law has spanned only the past 35 years.

As a result, there is a completely different approach to enacted laws, including broadly understood road safety (BRD) and traffic regulations. This particularly concerns two fundamental functions of the law:

- **The function of social control** – consisting of establishing legal norms that define standards of expected behaviour and predict reactions (consequences) for deviations from these required standards.[41]
- **The educational function of the law**[42] – where legal norms motivate recipients to act in accordance with the model behaviour prescribed by the norm; the subject to whom the norm is addressed may either comply with the model or breach it, often in a negative sense.

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A legalistic approach is characterised by adherence to the law simply because it is the law. Additionally, a high level of trust in public authorities motivates individuals to act in accordance with the prescribed model, as it is socially recognised as appropriate and serving the common good. State coercion in enforcing the law does not need to be applied or is applied very rarely.

This model is characteristic of Norwegian society, epitomised by the fact that road safety is considered a common good serving all citizens. Violations of traffic regulations are viewed as breaches of a societal good, and individuals who commit such violations are willing to accept punishment, seeing it as a form of correcting imprudent behaviour.

[40] Szelągowska, G., Szelągowska, K., *Historia Norwegii XIX i XX wieku*. Warsaw, 2019.

[41] Przesławski, T. *Wybrane zagadnienia prawoznawstwa. Szkice z propedeutyki prawa*. Warsaw, 2018, pp. 41–42. See also: Burdzik, T. "Prawo jako narzędzie kontroli społecznej," in Moczuk, E., & Sagan, B. (eds.), *III Forum Socjologów Prawa „Prawo i ład społeczny"*, pp. 63–72; Ossowski, S. "Z zagadnień psychologii społecznej," in *Dzieła*, vol. III, Warsaw, 1967, p. 81.

[42] Przesławski, T. *op. cit.*, p. 48. See also: Chauvin, T., Stawecki, T., & Winczorek, P. *Wstęp do prawoznawstwa*. Warsaw, 2023, pp. 180–183.

POLISH MODEL

A variant of the legalistic attitude is the critical legalism stance, which is associated with a conformist attitude. It links compliance with the law to the behaviour of the social group with which the individual identifies. An opportunist conforms to the law if it is beneficial or if it is necessary due to the threat of sanctions. Often, they also question the legitimacy of legal norms, regardless of whether such questioning has rational substantive grounds. Only state coercion forces the opportunist to comply with legal provisions.

This model characterises Polish society, exemplified by the fact that when an individual violates traffic regulations, they question the legitimacy and correctness of the applied solutions, and consequently seek to avoid any impending criminal sanctions by all possible means.

The aforementioned considerations are of significant importance for this study. An expression of this approach to road safety principles can be found in Section 1a of the Norwegian Road Traffic Act,[43] which states: *"The purpose of this Act is to ensure the planning, construction, maintenance, and operation of public and private roads, so that traffic on them proceeds in a manner that properly informs road users and the public. The primary objective for road managers is to ensure, to the greatest extent possible, a safe and efficient flow of traffic, while attending to neighbouring interests, the natural environment, and social interests."*

In the Polish Act on Public Roads and the Road Traffic Act, there are no analogous provisions that treat road traffic safety (RTS) as a common good. While Article 1 of the Act on Public Roads indicates that public roads are accessible to everyone on the basis of universal access, RTS is not treated as a specific category of common good. In Poland, following the Supreme Court rulings after 2010, a judicial line has developed indicating that the exercise of public authority in areas related to broadly understood RTS is seen as a manifestation of caring for the common good of all citizens.[44] It represents a public interest but also aligns with the interests of individual members of the society forming the nation. Additionally, it was only in 2018 that Article 135(3) of the Road Traffic Act introduced an indirect regulation stating that *"road safety"* constitutes *a good* in itself, with only legally protected goods (e.g., life and health) being of higher value.

The average Norwegian citizen understands that traffic regulations, imposed orders and prohibitions, road signs, and traffic signals serve the common good, and that individual deviations in adhering to traffic regulations represent a serious breach of a specific social order. There is a high level of trust in public authorities that establish traffic norms. Even if it turns out that some regulations are inappropriate, this becomes the subject of in-depth debate among the bodies responsible for road traffic safety (UP, SV, TT), involving lawyers, experts, and representatives of the Norwegian Supreme Court.

[43] Norwegian Road Traffic Act (*Lov om vegar*) of 21 June 1963 (publisher: 7 May 2021, no. 34).

[44] Supreme Court judgment of 4 December 2013 (III KK 298/13); see also: Decision of the District Prosecutor's Office in Warsaw of 23 June 2023, reference 3041-5.Dsn.1235.2023; Decision of the District Court for Warsaw – Śródmieście, Criminal Division II, of 31 January 2023, reference II Kp 1610/22.

In contrast, the average Polish citizen constantly evaluates the "gains and losses" when faced with the choice of complying with or disregarding traffic regulations. Even if they do follow the rules and inadvertently violate a particular road sign or signal, they begin to look for ways to evade criminal responsibility for the offence committed. Socially, this attitude in Poland is often approved by a large part of society. It is seen as an example of "resourcefulness," "cleverness," and "initiative" by the driver. Media often highlight this as a skilful exploitation of "loopholes" in the existing legal system, even if the driver has created a serious risk to road traffic safety (RTS). This also reflects disapproval of public authorities, which are perceived as improperly legislating in the area of RTS.

4.1.3. Grassroots mechanisms for ensuring RTS

The reflection of the aforementioned attitudes is also evident in the mode, manner, and mechanism of revealing traffic violations that threaten RTS.

Theoretically, Section 223 of the Norwegian Criminal Procedure Act[45] is similar to Article 304 § 1 of the Polish Code of Criminal Procedure. Both provisions stipulate that anyone who becomes aware of a crime is obligated to report it to the Police or the Prosecutor. However, the difference lies in the fact that Section 223 of the Norwegian Criminal Procedure Act[46] also extends to traffic violations – thus covering both traffic crimes (in the sense of Polish law) and traffic misdemeanours (in the sense of Polish law). In contrast, in Poland, traffic violations and the procedures associated with them are governed by a separate code – the Code of Misdemeanour Procedure. This code lacks a legal regulation analogous to that in the Code of Criminal Procedure.

Theoretically, a Norwegian is obligated to report – in the sense of Polish law – both traffic crimes and traffic misdemeanours if they witness or become aware of them, whereas a Pole is obligated to report only traffic crimes if they witness or become aware of them. However, this distinction is secondary due to the historical conditions outlined in this chapter. An average Norwegian citizen, who declares a high level of trust in public authorities and regards RTS as a common good, naturally reports observed irregularities and threats to RTS. They view this not only as a legal duty but also as a sense of responsibility to maintain social order and the good of RTS. This has deep roots in the Old Norse concept of *dugnáðr* (in modern Norwegian: *dugnad*) – which signifies community life based on partnership, placing the common good above personal gain, providing voluntary help to others, reporting mutually observed irregularities to improve living conditions, and celebrating order together. These customs are strongly upheld in Norway.[47] A decisive 92% of citizens declare strong trust in the police,[48] which further significantly reinforces the already solid trust in Norwegian authorities, courts, and public institutions (64%).[49]

In contrast, the average Polish citizen, compared to their European counterparts, exhibits anexceptionally high level of distrust towards all institutions, particularly public institutions (courts, offices, public administration, law-making bodies – with a declared lack of trust at levels between

[45] Criminal Procedure Act of 22 May 1981 (publisher: 31 May 2024, no. 25).
[46] Ibid.
[47] Kurek, A., *Szczęśliwy jak łoś. O Norwegii i Norwegach*. Poznań, 2018; Witoszek, N., *Najlepszy kraj na świecie. Pamflet*. Wołowiec, 2021.
[48] *The Global Safety Report*, Gallup Institute, 2024. According to data from 2021, this figure was 79% in Norway.
[49] *Building Trust to Reinforce Democracy*, OECD, 2022.

27% and 61%).[50] The situation is somewhat better concerning the Police. According to research findings, 10% of citizens declare strong trust in the Police, while 62% express moderate trust in this service. Thus, **72% of Poles declare at least moderate trust in the Police**,[51] whereas 28% do not trust the Police or cannot say whether they trust it.[52] It is also important to remember that the actions of the Police are linked to the broadly understood justice system and public institutions**. Despite the high level of trust in the officers of the Polish Police, their actions, as they relate to the activities of the wider justice system, can be perceived in various ways within Polish society.**

These findings mean that in Norway, every citizen acts as a sort of "policeman," equally safeguarding the common good of RTS. As a result, any irregularities concerning compliance with traffic regulations in Norway are immediately reported to the police by those who have documented them. The Norwegian police often do not need to be on-site or document every incident themselves, as they are highly likely to be informed about almost every traffic violation due to the active reporting by citizens.

In Poland, such behaviour is socially perceived as "informing" or "maliciousness," or as an unnecessary exaggeration of "minor traffic offenses." Often, individuals who report these violations face physical or psychological retaliation from those penalised with fines for their traffic offenses. Whistleblowers are also frequently intimidated or become targets of mockery. To address this issue, Polish legislation has introduced the Whistleblower Protection Act of 14 June 2024 (effective from 24 September 2024),[53] aimed at protecting whistleblowers acting in the interest of the common good. At this stage, the functioning of this law within the Polish legal system remains unknown. In Norway, however, this is a natural practice, as Norwegians collectively care for their shared *dugnaður*, including in the realm of RTS.

The remainder of this paper should be viewed through the lens of the aforementioned legal and historical conditions, which have a lasting impact on citizens' reactions to the rules and regulations in the sphere of RTS.

[50] *Komunikat z badań nr 40/2024. Zaufanie społeczne*, CBOS, April 2024, p. 9, Table 4. According to Eurobarometer data from February 2023, 69% of citizens in Poland do not trust the government and public institutions – *Opinia publiczna w Unii Europejskiej. Raport Krajowy Polska styczeń-luty 2023 roku*.
[51] *Komunikat z badań*..., p. 9, Table 4.
[52] Ibidem,
[53] See: Art. 3(1)(6) of the Whistleblower Protection Act of 14 June 2024 (Journal of Laws 2024.928).

4.2. Structure of road administration

The structure of road administration in Norway is governed by the Road Traffic Act of June 21, 1963 (last amended on June 1, 2021).[54] There are also additional legal acts that specify the tasks of road administration.

4.2.1. Categories of roads. RTS management.

The starting point here is the structure of the existing road network. According to Section 2 of the Norwegian Road Act, public roads include **national roads**, **county roads**, and **municipal roads**. The Ministry of Transport and Communications (*Samferdselsdepartementet*, SD) can issue more detailed guidelines regarding the classification and categorization of public roads.

At this stage, it is already apparent that compared to the Polish system, Norway has a more streamlined road administration structure. In Poland, according to Article 2, Section 1, Points 1-4 of the Act on Public Roads, public roads are divided into **national, voivodeship, county, and municipal roads**.

In Norway, the management of roads and traffic management on roads fall under the competence of a single authority (§ 9 of the Norwegian Road Act) for each category of road. Thus, for national roads, this function is performed by the Norwegian Public Roads Administration; for county roads, by the respective County Road Administration; and for municipal roads, by the individual Municipalities.

Strategic and conceptual decisions regarding the reconstruction, expansion, or construction of public roads in Norway are made by the Storting (the unicameral parliament of Norway) for national roads, by the County Council for county roads, and by the Municipal Council for municipal roads.

In contrast, in Poland, the functions of road management and traffic management are separated. There is also a division of responsibility for RTS between the road manager and the authority responsible for traffic management on the road.

According to Article 10, Sections 3-6 of the Road Traffic Act, the authorities responsible for managing traffic on roads are as follows: the General Director of National Roads and Motorways (for national roads), the Voivodeship Marshal (for voivodeship roads), the County Starost (for municipal and county roads), and the City President (for all roads within a city with county rights, excluding expressways and motorways).

Significant differences between the two countries are illustrated in the table below.

[54] Road Traffic Act of June 21, 1963 (publisher: 2021-05-07-34).

Table 11. Key differences in road and traffic management systems

	Poland		Norway	
Municipal road	Road management	Municipal authority	Road management	Municipal authority
	Traffic management	Starosta (country governor)	Traffic management	
County road	Road management	County authority	Road management	County authority
	Traffic management	Starosta	Traffic management	
Voivodeship road	Road management	Voivodeship authority	No such category	
	Traffic management	Marshal of the Voivodeship		
National road	Road management	National Road District (GDDKiA)	Road management	*Statens vegvesen* (Norwegian Public Roads Administration)
	Traffic management	General Director of National Roads and Motorways	Traffic management	

Source: own elaboration based on: Norwegian Road Traffic Act of January 1, 1964, Polish Act on Public Roads of March 21, 1985, Polish Road Traffic Act of June 6, 1997.

The table clearly shows that in Norway, the management of RTS tasks is more structurally concentrated in relation to specific categories of roads, whereas in Poland, it is more elaborate. Responsibility for implementing measures to improve RTS remains unspecified in Poland. This is because responsibility for this area is divided between road authorities (Article 20 points 4, 10, 10a, 14, 20 of the Public Roads Act) and road traffic management authorities (§ 3 section 1 points 2 and 8 of the Regulation of the Minister of Infrastructure of 23 September 2003 on detailed conditions for road traffic management and supervision over this management). This does not facilitate cooperation and coordination of actions in the field of RTS and often leads to numerous conflicts.[55]

It is also important to note that in the Norwegian system, there is no distinction between road management and traffic management, which is present in Poland under the Public Roads Act and the Regulation of the Minister of Infrastructure of 23 September 2003 on detailed conditions for road traffic management and supervision over this management.

In Poland, according to § 1 section 2 point 1 of the Regulation of the Minister of Infrastructure of 23 September 2003 on detailed conditions for road traffic management and supervision over this management, issues related to traffic organization are the responsibility of separate traffic management authorities, distinct from the public road managers. In Norway, however, road managers (SV, county road authorities, and municipalities) hold competencies across all areas – design, construction, expansion, reconstruction, operation, and traffic organization.

In Norway, a road authority performs both road management and traffic management tasks simultaneously.

[55] See: Hasiewicz, J. *Zarządzanie ruchem drogowym. Komentarz*. Warsaw, 2020.; Hasiewicz, J. *System zarządzania ruchem na drogach w Polsce*. Warsaw, 2016.

4.2.2. Central institutions dealing with improving RTS

Apart from the previously mentioned arrangements, it is important to note that both Poland and Norway have central institutions responsible for improving RTS.

In Norway, the Ministry of Transport and Communications (SD) bears primary responsibility for RTS through its administration of central regulations and infrastructure. The Norwegian Public Roads Administration (SV) is responsible for the sector and is tasked with being the initiator, coordinator, and driving force behind achieving set goals to reduce the number of fatalities and serious injuries in road traffic.

Currently, Norway has extensive cross-sectoral cooperation in RTS. A key example is the *National Plan of Action for Road Safety 2022-2025*. This action plan represents a unique interdisciplinary collaboration among stakeholders working on RTS and ensures coordinated, comprehensive, and continuous efforts towards a common goal. The plan is prepared by the Norwegian Public Roads Administration (SV), the Police (UP), the Norwegian Directorate of Health, the Norwegian Directorate for Education and Training, the National RTS Council (*Trygg Trafikk*), county councils of the National RTS Council, selected municipalities, certain state agencies, and specific public benefit organizations.

In this context, it is important to address **the Norwegian National RTS Council** (*Trygg Trafikk*), which holds particular significance for this analysis. It is not an ideal counterpart to **the Polish National RTS Council** (Polish: *Krajowa Rada Bezpieczeństwa Ruchu Drogowego*, KRBRD) and is, in fact, quite differently constituted within the Norwegian legal system.

In Poland, KRBRD is established under the provisions of Articles 140b–140l of the Road Traffic Law. The chairperson of the KRBRD, by virtue of the law, is the Minister responsible for transport. This also applies to the deputy chairpersons, the secretary, and the members of the KRBRD. It has an institutionalized character and serves as an interdepartmental advisory body to the Council of Ministers on matters of road safety (Article 140b, Section 2 of the Road Traffic Law).

In Norway, the National RTS Council functions as a "soft" support mechanism for SD, SV, and UP in improving RTS. Established on June 1, 1956, with the endorsement of SD and at the request of insurance companies and automotive organizations, this organization does not hold the status of an institutionalized public administration body. It operates as a non-governmental organization (NGO) with nationwide reach and also works locally through various RTS committees. The activities of *Trygg Trafikk* are governed by its statute dated January 24, 1957, as amended on April 22, 2008. As stated in § 3 of the Statute of the National RTS Council:[56] *"Trygg Trafikk is a nationwide **NGO** that brings together volunteers for road safety, acting as a liaison between the volunteer community and the public authorities responsible for road safety."*

[56] Statute of the National Council for Road Safety (*Trygg Trafikk*) dated January 24, 1957 (as amended on April 22, 2008).

According to § 2 of the Statute, the responsibilities of the National RTS Council (*Trygg Trafikk*) include:

- Improving road safety (RTS),
- Providing education and information on RTS through coordinated efforts aimed at preventing road accidents,
- Creating RTS reports,
- Publishing a system of advice on RTS.

Trygg Trafikk also regularly publishes updated facts and advice on road safety (RTS).[57]

According to § 4 of the Statute of the National RTS Council, its members may include private companies, state enterprises, organizations, municipalities, counties, interest groups, and individuals. The activities of *Trygg Trafikk* are financed through member contributions, membership fees, annual grants from the Ministry of Transport and Communications, and annual grants from the insurance industry coordinated by the Department of Industry.

It is clearly evident that there is a significant difference in the operation of the National RTS Councils in Poland and Norway. In Norway, in the process of enhancing RTS—including proposing new ideas, suggesting changes, advocating for new solutions, and submitting initiatives—any individual who becomes a member of *Trygg Trafikk* can participate. In contrast, in Poland, the catalogue of entities involved in the work of the National RTS Council is statutorily limited, and grassroots initiatives (such as public observations, extra-legal assessments, non-expert evaluations, and individual assessments) can only occur with the arbitrary agreement to participate in the work of the RTS Council (or the Regional Council) as an advisory voice from a non-governmental organization whose statutory activities cover road safety issues (Article 140l point 1 of the Road Traffic Law).

The board of the Norwegian National RTS Council consists of a chairperson, a deputy chairperson, five board members, and four deputies. The General Assembly elects the chairperson, five board members, and three deputies. The staff of *Trygg Trafikk* elects one member along with a personal deputy.

Table 12. National RTS Councils – scope of work and competencies

	Poland	Norway
Legal status	Inter-ministerial public administration body	Non-profit organization
Police participation	Yes (a person designated by the Chief Police Commander)	No (optional)
Participation of road management representatives	Yes	Yes
Chairperson	Minister responsible for transport	Elected individual[58] according to the statues

[57] Source: www.tryggtrafikk.no.

[58] Currently, this role is held by Karin Bjørkhaug, who is an economist by education. She has worked professionally in the sales and marketing department of a company that produces stainless steel equipment and fixtures. Source: www.tryggtrafikk.no.

	Poland	Norway
Funding	State budget	Grants, membership fees, annual grants from the Ministry of Transport and Communications, and insurance industry grants
Form of operation	Making resolutions	Making resolutions, issuing recommendations, sending advisories
Formy poprawy BRD	• Poland	• Participating in developing road safety improvement programs in collaboration with the Norwegian Public Roads Administration (SV), county road authorities, and municipal road authorities • Publishing guides and recommendations for road users • Collaborating with relevant social organizations and non-governmental institutions • Initiating educational and informational activities • Coordinated actions aimed at preventing road accidents • Creating annual RTS reports • Organizing the annual National Road Safety Conference[59]

Source: own work based on: Statute of the National RTS Council (*Trygg Trafikk*) of January 24, 1957 (as amended on April 22, 2008), and Articles 140b – 140l of the Polish Road Traffic Law.

The information outlined above clearly demonstrates the differences between Polish and Norwegian approaches to road safety. In Norway, the nationwide institution responsible for RTS takes a more grassroots approach, being closer to the "average" road user. These solutions practically allow everyone to participate in the work of *Trygg Trafikk* and initiate changes. It is important to note that the Norwegian National RTS Council has regional and local branches.[60]

The Polish system, on the other hand, is more closed to the proposals of average road users but provides greater influence for the National RTS Council on legislative, statutory, and practical actions regarding the implementation of regulations by road traffic control authorities.

The scope and model of campaigns aimed at improving RTS between the two institutions in Poland and Norway are similar. These mainly involve informational campaigns, including television and radio ads, promoting knowledge in road traffic areas, informing about the negative effects of road accidents, and creating guides for driving under challenging conditions.

[59] The most recent conference took place on April 17, 2024, in Oslo. The next conference is scheduled for April 9, 2025, also in Oslo.
[60] See: § 3 of the Statute of the National RTS Council (*Trygg Trafikk*) dated January 24, 1957 (as amended April 22, 2008).

4.2.3. Leading entity responsible for RTS

In this section of the study, it is important to identify the leading entity responsible for implementing measures to address risks in RTS in Norway. This is **the Norwegian Road Administration** (*Statens vegvesen*, SV), which collaborates with the Police (UP) in this regard.[61] SV is structurally responsible for managing, researching, planning, constructing, operating, and maintaining national roads, as well as issuing recommendations and guidelines for the management of lower-category roads. SV also issues licenses for national ferry connections and for passenger and freight transport, and grants exclusive rights for operating national ferry routes.

SV performs comprehensive tasks related to authority and administration in road management. It has the authority to issue technical regulations and establish standard requirements for all public roads (national roads, county roads, and municipal roads)[62]. SV also conducts systematic RTS analyses on national roads and selected lower-category roads.[63] By issuing special reports, SV identifies hazardous areas from an RTS perspective[64] and highlights current threats posed by road infrastructure.[65]

It is important to note a significant difference between the tasks of Poland's GDDKiA and Norway's SV. While the Norwegian National Road Administration has influence not only over national roads but also impacts lower-category road managers in the realm of RTS, the Polish General Directorate for National Roads and Motorways (GDDKiA) has a more limited scope, focusing solely on national roads in terms of RTS. As a result, the tasks of GDDKiA cannot be directly translated to those of SV.

Statens vegvesen also conducts detailed cause-and-effect analyses ("in-depth analysis") of fatal traffic accidents, taking into account factors such as terrain conditions, existing traffic organization, driver condition, vehicle condition, and time of the incident.[66] It is evident that in Poland, such analyses are typically assigned to the police institutionally.[67] Alternatively, road managers or the National RTS Council may later draw conclusions from these analyses and implement specific changes in legal regulations, RTS measures, or traffic organization.

In Norway, the systemic analysis of traffic accidents (particularly fatal ones) in relation to road infrastructure responsible for RTS—following the basic procedures conducted by the police (UP) for preliminary and judicial proceedings—falls under the jurisdiction of the Norwegian Road Administration.[68] SV also analyses the occurrence of less severe traffic accidents, types of accidents, and their implications for vulnerable road users.[69] In cases where SV cannot conduct the necessary analytical, research, and scientific work on its own, it seeks expert opinions or analyses

[61] On the role of UP (*Utrykningspolitiet*) – later in the document.
[62] Undersøkelse knyttet til erfaringer med N601 og NEK600:2021 (22.12.2023; 10253059-02-TVFRAP01).
[63] *Trafikksikkerhetsvurdering av riksvegrutene, Statens vegvesen rapporter nr 899*, 28.02.2023.
[64] *Trafikkulukker og-uhell på E39. Kartlegging av trafikkulukker og –uhell på E39 mellom Sandnes og Stavanger*, Statens vegvesen rapporter nr 909, 28.04.2023.
[65] *Skader pĺ sykkel og elektrisk sparkesykkel i Oslo Resultater fra en registrering i 2019/2020. Statens vegvesen rapporter nr 720*, 24.03.2021.
[66] *Dybdeanalyser av dødsulykker i vegtrafikken 2022. Statens vegvesen rapporter nr 936*, 28.04.2023; *Dybdeanalyser av dødsulykker i vegtrafikken 2021. Statens vegvesen rapporter nr 847*, 08.2022. *Dybdeanalyser av dødsulykker i vegtrafikken 2019. Statens vegvesen rapporter nr 691, 08.2020.* Dybdeanalyser av dødsulykker i vegtrafikken 2018. *Statens vegvesen rapporter nr 256*, 06.2019. *Dybdeanalyser av dødsulykker i vegtrafikken 2017*. Statens vegvesen rapporter nr 669, 06.2018. *Dybdeanalyser av dødsulykker i vegtrafikken 2016*. Statens vegvesen rapporter nr 640, 05.2017.
[67] See: Article 1(2)(2) of the Police Act in connection with Order No. 31 of the Chief of Police dated 22 October 2015 on the methods and forms of maintaining road traffic incident statistics by the Police.
[68] *Rettledning. Anmeldelse av vegtrafikkulykker. Statistisk sentralbyra, Statens vegvesen*, Politidirektoratet. Oslo, 2012 (NO-0033).
[69] *Tungt møter mykt. Ulykker i by med tunge kjøretøy og myke trafikanter. Statens vegvesen rapporter nr 307*, 29.08.2018.

from research institutes. Typically, such reports are commissioned from the Institute of Transport Economics (TØI)[70] based in Oslo.[71]

In Poland, similar provisions exist where traffic management authorities or public road managers, when justified needs arise, can seek the opinions of experts, assessors, or RTS auditors.[72]

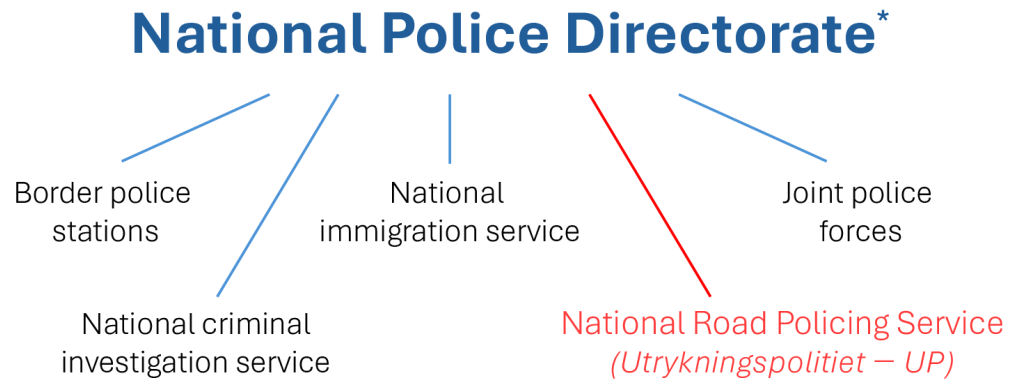
Statens vegvesen is also authoritatively responsible for the development of ITS (Intelligent Transport Systems) to create a comprehensive and cohesive road transport system.[73]

In certain areas, however, the Storting (the unicameral parliament of Norway) sets national transport policy goals through the National Transport Plan. This document outlines investment priorities for transport policy in Norway and is reviewed every four years. The topics of the National Transport Plan are discussed in another section of this study.

4.3. Structure of the Police

The structure of the Police in Norway is defined by the Norwegian Police Act of August 4, 1995 (effective from October 1, 1995).[74] At the top of the Norwegian Police is the Chief of Police (§ 15 of the Act). The Police are structurally under the Ministry of Justice and Public Security (§ 15 and 16 of the Act).

Diagram 1. Structure of the Norwegian Police



* There are also other units directly subordinate to the National Police Directorate.

Source: own elaboration.

Key significance for the analysed topic is the Norwegian National Road Policing Service (*Utrykningspolitiet*, UP).[75]

[70] *Transportøkonomisk institutt.*
[71] *Sykkel i Oslo – eksponering, ulykker og risiko. Arbeidsdokument 51154, 4460 Eksponeringsdata sykkel i Oslo*, 20.06.2017; *Litteraturstudie – "Safety in numbers". Arbeidsdokument 50428*, Oslo 20.12.2013.
[72] See: § 8(1)(2) and (3) Regulation of the Minister of Infrastructure of 23 September 2003 on Detailed Conditions for Road Traffic Management and Supervision and § 24n of the Public Roads Act.
[73] Norwegian Act on Intelligent Transport Systems (ITS) in Road Transport of 11 December 2015 (publisher: 2015-12-11-101).
[74] Norwegian Police Act of 4 August 1995 (publisher: 2024-05-31-25).
[75] In a literal translation: "Traffic Emergency Police", "Emergency Police", "Special Emergency Police", "Special Road Police".

4.3.1. *Utrykningspolitiet* (UP) – National Road Policing Service

National Road Policing Service (UP) bears the main responsibility for road traffic control. It is a specialized agency within the structure of the Norwegian Police. Its duties include working towards improving RTS, combating road-related crime, assisting and being prepared for emergency situations, handling traffic offenses, and developing new methods and materials used in RTS work. UP also participates in detailed investigations of fatal road accidents together with employees of *Statens vegvesen*. Additionally, the Police provide opinions on certain changes to permanent traffic arrangements that enhance RTS, such as speed limits, right-of-way rules, some intersections, and parking restrictions, as well as the location of automated traffic control (ATC) systems (both point-based and section-based).

UP competencies are described further in the following sections of the report.

The structure of UP differs from the general structure of the Police due to its specific nature and is organized separately. Norway is divided into 5 UP districts:

1. **East:** Eastern Police District and Innlandet Police District,
2. **South:** Agder and South-Eastern Police Districts,
3. **West:** South-Western and Western Police Districts,
4. **Central:** Møre og Romsdal and Trøndelag Police Districts,
5. **North:** Nordland, Troms, and Finnmark Police Districts.

The headquarters of UP is located in Stavern (Vestfold County).

4.3.2. Automated Traffic Control – the significant role of *Utrykningspolitiet*

One of the key functions of the Norwegian National Road Policing Service (UP) is overseeing traffic control through the Automated Traffic Control (ATC) system. The Norwegian Public Roads Administration (SV) and UP collaborate on the implementation and criteria for ATC.[76] The criteria for establishing an ATC control point include:

- Road environment and local conditions.
- Technical condition of the road.
- Number of traffic accidents on the road segment.
- Assessment of the road segment for ATC coverage.
- Decision on system type (point-based or section-based control).
- Average speed on the road segment.
- Exceptions to general criteria (tunnels, tunnel lengths, local geographical conditions, and cases where standard police checks by UP might be difficult).

[76] *Veileder til Retningslinjer for valg av steder og strekninger for Automatisk trafikkontroll (ATK).* 27.04.2021; *Veileder til Retningslinjer for valg av steder og strekninger for Automatisk trafikkontroll (ATK)*. 20.03.2023.

SV conducts analyses and proposes locations for the ATC system (either point-based or section-based) based on collected data on road safety, accident statistics, and the aforementioned criteria. However, **the final decision is made after obtaining a written opinion from the UP.**

SV is responsible for the equipment and measurements, while UP and the special ATC department within UP (police ATC centre) decide on behalf of the Police which cameras should be active and for how long.[77]

Comparing Norwegian solutions with the Polish system, it is evident that the role of the Police in the operation of the ATC systems is quite different. In Poland, the issue of automatic road traffic control through point-based or section-based speed measurements has been assigned to a separate institution, the Chief Inspectorate of Road Transport (Polish: *Główny Inspektorat Transportu Drogowego*, GITD)[78].

Table 13. Involvement of the Police in Automatic Traffic Control

	Poland	Norway
Proposal for location of measurement point/section	Public road manager or GITD	*Statens vegvesen* (SV) or *Utrykningspolitiet* (UP)
Removal of measurement point	Public road manager or GITD	*Statens vegvesen* (SV) or *Utrykningspolitiet* (UP)
Cost of establishing measurement point	Public road manager (for municipal, county, and regional roads) or GITD (for national roads)	*Statens vegvesen* (SV)
Maintenance of measurement point/section	GITD	*Utrykningspolitiet* (UP)
Issuance of fines (handling violations)	GITD	*Utrykningspolitiet* (UP)
Allocation of revenue from fines	National Road Fund for RTS improvement or construction/reconstruction of national roads	State budget

Source: own elaboration.

The Norwegian police ATC centre (operating within UP) identifies drivers and issues fines, and if necessary, can also electronically suspend driving licenses. It is also authorized to conduct any additional necessary investigative actions. The centre is legally empowered to initiate administrative (criminal) proceedings and impose fines. In Poland, the effective functioning of the automated driver monitoring system is significantly hindered due to procedural reasons as well as the shortcomings of the applicable regulations, which in their current form prevent the effective and efficient prosecution of offenders detected by recording devices, leaving a significant percentage of them unpunished. A significant number of detected offences through automated speed control devices in Poland remain unresolved in the form of imposed fines due to the **lack of response** from the vehicle

[77] Ibid.

[78] See: Art. 54 of the Road Transport Act of September 6, 2001; Art. 20b – 20e of the Public Roads Act; Art. 129a of the Road Traffic Act; § 18 of Order No. 58/2011 dated December 15, 2011, of the Chief Inspector of Road Transport regarding the organizational regulations for the Chief Inspectorate of Road Transport.

owner/driver to the first summons issued by GITD, which is intended to establish the facts of the case and identify the specific perpetrator of the offence. [79] As a result, the effective prosecution of offenders detected by automated speed control devices in Poland is limited.

The issue does not exist in Norway due to the fact that the Police are explicitly indicated in the Norwegian Criminal Procedure Act of May 22, 1981,[80] as the authority capable of conducting investigative procedures and subsequently appearing in court proceedings regarding submitted requests for penalties. This also applies to activities related to the Norwegian ATC system.

More information about the procedures and actions of the Norwegian Police in this and other areas will be covered later in the document.

4.3.3. Visibility of the Police on the road and RTS levels

According to Section 1 of the Norwegian Police Act, one of the activities of this service is *"preventive actions."*[81] Additionally, Section 2, Subsection 2 of the Norwegian Police Act emphasizes prevention and *"preventive measures."*[82] According to Section 6 of the Norwegian Police Act, its actions must be objective, and interventions are not undertaken where the situation does not require it.[83]

It should be noted that the mere enforcement of the law does not necessarily involve physical intervention by UP resulting in the issuance of a fine to the driver. In Norway, the primary role of law enforcement is to "deter" road users from committing offenses, especially related to speeding, driving under the influence of alcohol or drugs, and inattentiveness in traffic.[84] This is manifested in standardized police patrols, which, theoretically, under the Norwegian Police Act, can conduct routine traffic checks without cause. According to Section 7, Subsection 3 of the Norwegian Police Act, the overarching goal of this service is to *"prevent crimes or deter them from being committed,"* including in the realm of *"regulating (enforcing) road traffic rules."*

Comparing Polish and Norwegian regulations, it is noticeable that Polish law sets objectives for the police such as "*protecting public safety and order"* and *"detecting crimes and offenses and pursuing their perpetrators"* (Article 1, Section 2, Point 4 of the Police Act). In other words, the Polish police system focuses top-down on detecting, intervening, and sanctioning unlawful behaviour, whereas the Norwegian system initially emphasizes prevention, prophylactics, and deterrence, and only then sanctions legal violations. These tasks shape the work of the Norwegian National Road Policing Service (UP). Consequently, **Norway places a significant emphasis on the presence and visibility of the police on the road**—even when no active enforcement is taking place, simply being visible to road users. Additionally, police actions in Norway receive broad public support (it should

[79] It should be noted that responding to the first summons from the GITD by the vehicle owner / driver enables GITD to obtain the necessary information (including the driver's details) to issue a fine or submit a request for punishment to the court, for which it already has the authority under the provisions of the Code of Offences Procedure of 24 August 2001. Incidentally, it should be pointed out that many vehicle owners / drivers deliberately do not respond to GITD or delay their response, hoping for the expiration of the statute of limitations for prosecution and penalty enforcement based on Article 45 § 1 of the Code of Offences (1 year – in the case of no initiation of proceedings, 2 years – in the case of successful initiation of proceedings within the 1-year period). GITD does not have the appropriate legal mechanisms to prevent such situations, and undertaking additional explanatory actions is procedurally limited and often impossible to conduct due to the passage of time in the context of Article 45 § 1 of the Code of Offences.

[80] See: §§ 223 and 225 of the Norwegian Act on Criminal Procedure of 22 May 1981 (publisher: ZA-2024-05-31-25).

[81] Norwegian Police Act of 4 August 1995 (publisher: 2024-05-31-25).

[82] Ibid.

[83] Ibid.

[84] Larsen, R.S. *The Keys to Road Safety Success in Norway*. Oslo, July 9, 2024. p. 2.

be noted that 92% of Norwegians trust the police), and the public, adhering to the principle of Norwegian *dugnad*, supports the police in their preventive efforts. [85]

Utrykningspolitiet conducts extensive informational campaigns on social media platforms, encouraging road safety awareness among Norwegian citizens.[86] These campaigns often feature updates on the daily work of UP, where the visual presence of the police on the road is sometimes highlighted.

4.4. Road traffic rules

The road traffic rules in Norway are principally regulated by two legal acts:

- The Road Traffic Act of 18 June 1965 concerning motor vehicle traffic[87],
- The Act on Road and Pedestrian Traffic of 21 March 1986, which include provisions regarding pedestrian and bicycle traffic[88].

There are also additional regulations clarifying the rules for specific road users; however, analysing these at this stage is not critical for the purpose of this document.

4.4.1. Public and private roads

A key principle regarding road traffic is outlined in § 1 of the Road Traffic Act of 18 June 1965, which states that traffic rules apply to public roads (i.e., national, county, and municipal roads) and *"other publicly accessible places where motor vehicle traffic customarily occurs."* This represents a significant difference from the Polish system of traffic regulations. According to Art. 1 § 1 point 1 of the Polish Road Traffic Act, the provisions of the Act apply to public roads, traffic zones, and residential zones. Generally, outside these areas—i.e., on internal roads located outside traffic zones and residential zones—the provisions of the Road Traffic Act do not apply. Exceptions are described in Art. 1 § 2 points 1 and 2 of the Road Traffic Act. This issue is crucial for the clarity of legal solutions regarding road traffic. **In Norway, regardless of whether a road user is on a public road or a private road, they are required to follow traffic rules. In contrast, in Poland, the situation depends on the status of the road on which the vehicle is traveling.**[89] **The Polish approach may indeed hinder the clarity and transparency of the traffic management system and the interpretation of traffic violations and accidents by police officers.**

Regarding the hierarchy of traffic directives, it should be noted that both the Polish and Norwegian systems have analogous solutions. Priority is given to **(I)** commands and signals given by traffic controllers or authorized individuals, followed by **(II)** traffic lights, then **(III)** instructions from vertical and horizontal traffic signs, and finally **(IV)** the general principles of the Road Traffic Act.[90]

[85] Ibid.
[86] Instagram: #utrykningspolitiet: https://www.instagram.com/explore/tags/utrykningspolitiet/. Facebook: https://www.facebook.com/utrykningspolitiet/.
[87] Road Traffic Act of 18 June 1965 (publisher: 2023-12-20-116).
[88] Act on Road and Pedestrian Traffic of 21 March 1986 (publisher: ZA-2022-06-17-1049).
[89] The possible factual situations are: (1) traffic on a public road, (2) traffic on a public road within a residential area, (3) traffic on an internal road within a traffic zone, (4) traffic on an internal road within a residential area, (5) traffic on an internal road located outside the traffic zone and residential area.
[90] See: Art. 5(1)–(3) of the Polish Road Traffic Act and §§ 5, 9, and 10 of the Norwegian Road Traffic Act of 18 June 1965 (publisher: 2023-12-20-116).

4.4.2. Procedures for managing RTS using signs and signals

The Norwegian Public Roads Administration (SV), county road authorities, and municipal road authorities are procedurally responsible for managing traffic on public roads. This is confirmed by § 5 of the Norwegian Road Traffic Act of 18 June 1965. In Poland, these tasks are performed by separate entities responsible for road traffic management (Art. 10(3)–(6) of the Polish Road Traffic Act).

In both countries, changes in traffic organization are carried out through the approval of engineering and technical documentation, which includes the placement of vertical and horizontal signs, traffic signals, and road safety devices. In Poland, according to §§ 4 and 5 of the Regulation of the Minister of Infrastructure of 23 September 2003 on Detailed Conditions for Road Traffic Management and Supervision of This Management, such documentation is referred to as the *"traffic organization project,"* while in Norway, it is known as the *"signs and road marking plan"* (*Skilt-og vegoppmerkingsplan*).[91]

Given the lack of separation between "road management" and "traffic management" functions, the traffic organization change procedure in Norway is quicker, simpler, and does not require extensive approvals. This allows for a faster response when improvements in road safety are needed on a particular stretch of road. It is also important to note that **the Norwegian Police do not participate in the traffic organization change procedure in every case, but only for certain types of road signs and on specific categories of roads.**[92]

The table outlining the general procedure for changing permanent traffic organization in Poland and Norway is provided in the annexes (Annex 2).

The involvement of the Norwegian Police[93] in the procedure for changing traffic organization on public roads mainly occurs in the areas of:

- Increasing or decreasing the speed limits on selected road sections;
- Priority rules at conventional intersections and roundabouts;
- Locations with potential conflicts between unprotected road users (pedestrians, cyclists) and motor vehicles—such as pedestrian crossings and cyclist crossing.

As a result, the Norwegian Police do not handle the assessment of elements such as the placement of information signs, direction and location signs, creation of transit sections for heavy vehicle traffic, or the placement of warning signs concerning wildlife migration routes. In these matters, the decision regarding signage is made independently by the relevant public road authority of the respective category. If needed, they may optionally seek the opinion of a selected institution. In contrast, in Poland, the Police's responsibilities in this area involve reviewing all traffic management methods—ranging from the placement of individual blocking posts (U-12c)[94] on sidewalks along minor county roads with minimal traffic, to reviewing solutions for traffic

[91] Statens vegvesen. *Planlegging og oppsetting av trafikkskilt. Handbok 046*. Oslo, February 2009, pp. 9–12.**
[92] Ibid., p. 11.
[93] § 26–29 of the Act on Road Signs, Road Markings, Traffic Lights, and Instructions for Their Use of 18 June 1965 (publisher: ZA-2022-12-22-2460).
[94] See: section 5.5 of Annex 4 to the Regulation of the Minister of Infrastructure of July 3, 2003, on Detailed Technical Conditions for Traffic Signs and Signals, and Road Traffic Safety Devices and Their Placement on Roads.

organization at complex interchanges on expressways, including connections and traffic lights at intersections within the interchange.[95]

A significant difference is that in Poland, a separate record of permanent traffic organization changes is maintained for each category of road. In contrast, changes on public roads in Norway are recorded in the Norwegian National Road Data Bank (*Nasjonal vegdatabank*, NVDB).

4.4.3. Requirements for proposed traffic management changes

The impact on RTS at the design stage is influenced by requirements regarding the use of traffic signs, signals, and road safety devices in traffic management projects (Poland) or road sign and marking plans (Norway). Generally, the systems for implementing such changes are similar, although there are some differences.

Table 14. Requirements for designing traffic management changes affecting RTS

	Poland	Norway
Name	Traffic Management Project	Signs and Road Marking Plan (*Skilt-og vegoppmerkingsplan*)
Scale	Principal scales: 1:500, 1:1000 Permitted scales: 1:2000 or sketch without scale	Principal scales: 1:200 or 1:500 Permitted scales: 1:100, 1:1000, 1:2000, 1:5000
Format	Unspecified (at the discretion of the designer)	A3 format
Basic requirements	• Marking of existing signs, marking of signs to be removed, marking of proposed signs • Road geometry parameters	• Marking of existing signs, marking of signs to be removed, marking of proposed signs • Indication of north, buildings, road name and number, flowing water
Colour coding of horizontal markings on the plan	Unspecified (at the discretion of the designer)	Green – white road horizontal markings Orange – yellow road horizontal markings
Additional requirements (in unclear situations or requiring in-depth documentation analysis)	Attach to the project: • Longitudinal profile or cross-section of the road • Data on existing or projected traffic volume, including directional structure at intersections and type structure	- Creation of auxiliary drawings (Q) illustrating potential readability conflicts with: • Ditches and barriers • Poles • Overhead cables • High voltage lines • Trees, vegetation, and roadside plantings • Surface contour - Analysis of existing traffic volume and forecasts
Resolution of doubts	Expert opinion, expert testimony, road safety opinion, Police opinion	Police opinion, expert opinion, *Transportøkonomisk institutt* (TØI) opinion

[95] See: § 7(2)(1-3) of the Regulation of the Minister of Infrastructure of 23 September 2003 on the detailed conditions for managing traffic on roads and supervising this management.

	Poland	Norway
Designer qualifications	None	• Completed higher education • Experience may be required for more complex projects, based on a statement from the designer

Source: own elaboration based on: Norwegian Act on Road Signs, Road Markings, Traffic Lights, and Instructions for Their Use of 18 June 1965 (publisher: ZA-2022-12-22-2460); Norwegian Road Traffic Act of 18 June 1965 (publisher: 2023-12-20-116); *Planlegging og oppsetting av trafikkskilt. Handbok 046.* Statens vegvesen, February 2009; Polish Road Traffic Act of 20 June 1997; Regulation of the Minister of Infrastructure of 23 September 2003 on the detailed conditions for managing traffic on roads and supervising this management.

A fundamental difference in the level of detail between the two systems is evident. It appears that the *"plan for road signs and markings"* in Norway requires greater specificity compared to the traffic organization projects in Poland. Due to the varied topography, Norwegian plans pay particular attention to the relationship between the terrain and natural features with the placement of road signs and safety improvements. Additionally, a notable difference is the requirement in Norway for specific engineering and design knowledge or experience when designing changes to permanent traffic organization.

4.4.4. Catalogue of road signs and signals

The system of road signs and signals in both analysed countries originates from the document "Convention on Road Traffic – Protocol on Road Signs and Signals and Final Act" (Geneva Convention) dated September 19, 1949. However, significant differences exist in each country regarding the classification of road signs.

Table 15. Catalogue of road signs and signals

Standard of the Geneva Convention	Poland	Norway
Warning signs	Warning signs	• Warning signs, • Priority and Yield Signs
Prohibition signs	Prohibition signs	Prohibition signs
Mandatory signs	Mandatory signs	Mandatory signs
Information signs	Information signs	• Information signs, • Road safety information signs, • Service signs
Pre-sign plates Place and route signs	Directional and place name signs	Directional signs
-	Additional signs	• Subordinate signs • Partial signs

Standard of the Geneva Convention	Poland	Norway
-	RTS devices	Marker signs
-	Road markings	Road markings
Number od road signs	Ca (~) 400 vertical signs[96]	Ca (~) 280 vertical signs[97]

Source: own elaboration based on: Act on Road Signs, Road Markings, Traffic Lights, and Instructions for Their Use of 18 June 1965 (publisher: ZA-2022-12-22-2460); Regulation of the Minister of Infrastructure dated July 3, 2003, on detailed technical conditions for road signs, traffic signals, and road safety devices and the conditions for their placement on roads; Convention on Road Traffic. Protocol on Road Signs and Signals and Final Act signed in Geneva on September 19, 1949.

In the Norwegian system, there is a somewhat different classification of road signs compared to Polish regulations. A key difference that stands out is the smaller number of road signs in the official catalog and the physically fewer signs on the roads. The Norwegian road administration operates on the sound principle that "over-signage" does not contribute to the readability of the driver's field of view.[98] This is reflected on public roads in Norway, where road signs are used only where absolutely necessary. This aligns with § 3 of the Norwegian Road Traffic Act,[99] which states that the responsibility for properly assessing the road's geometry, potential hazards, paying attention to other road users, and considering those who live or stay near the road rests with the driver.

In Poland, however, public administration authorities (particularly those managing road traffic) often operate under the assumption that every potential road safety hazard must be communicated to the driver through an appropriate road sign. As a consequence, there is significant "over-signage" on public roads in Poland.

A significant issue worth addressing is the existence in Norway of the *"road traffic safety information sign,"* which was introduced to the Norwegian road safety system on 27 November 2008. In the Polish road traffic management system (as outlined in the Regulation of the Minister of Infrastructure of 3 July 2003 on Detailed Technical Conditions for Road Signs and Signals and Road Safety Devices and Conditions for Their Placement on Roads), there is no direct equivalent of this sign.

Diagram 2. Example of sign no. 590 – "Road Traffic Safety Information Sign"

Source: Sections 12a and 12b of the Norwegian Act on Road Signs, Road Markings, Traffic Lights, and Instructions for Their Use of 18 June 1965.

According to §§ 12a and 12b of the Norwegian regulations on road signs, road markings, traffic signals, and their application dated June 18, 1965, this sign *"conveys messages related to road traffic*

[96] Without including additional plates used under road signs. The average number of signs is approximate due to dynamically changing regulations.
[97] Ibid.
[98] Sections 4, 4.1, 4.1.1, and 4.1.3 from *Planlegging og oppsetting av trafikkskilt. Handbok 046*. Statens vegvesen, February 2009.
[99] Norwegian Road Traffic Act of 18 June 1965 (publisher: 2023-12-20-116).

safety" (Sign No. 590). The shield of this sign is created individually and may be based on everyday photographs of road users. The design of the shield and the placement of such a sign are consulted with *Statens vegvesen*. This sign aims to encourage adherence to basic RTS principles in an accessible manner. An example of such a sign is illustrated in the adjacent graphic (*"Husk bilbelte" – "Remember your seatbelt"*).

4.4.5. Speed management on public roads

According to § 6 of the Norwegian Road Traffic Act dated June 18, 1965, drivers are required to adjust their speed according to the location, road conditions, visibility, and traffic conditions so as not to create danger or inconvenience to others. They must also minimize disruption to traffic and must not interfere with it. Norwegian legislators assume that drivers must *"always have full control over their vehicle."* Similar requirements are imposed on Polish drivers under Article 19(1) of the Polish Road Traffic Act.

The analysis should begin with the statutory speed limits. There are two main differences regarding permissible speeds outside built-up areas.

Table 16. Speed management

	Poland	Norway
Built-up area	50 km/h	50 km/h
Unbuilt area (general rule)	90 km/h	80 km/h
Unbuilt area (expressway)	General: 120 km/h* Option: Lowered by GDDKiA	General: 80 km/h Option: 80 – 90 km/h (regulated by road signs raising the permissible speed by SV)
Unbuilt area (motorway)	General: 140 km/h* Option: Lowered by GDDKiA	General: 80 km/h Option: 80 – 110 km/h (regulated by road signs raising the permissible speed by SV)

*** 100 km/h on single carriageway expressways.**

Source: own work based on: Polish Road Traffic Act of 20 June 1997; Norwegian Road Traffic Act of 18 June 1965 (publisher: 2023-12-20-116); Act on Road Signs, Road Markings, Traffic Lights, and Instructions for Their Use of 18 June 1965 (publisher: ZA-2022-12-22-2460).

Firstly, according to Norwegian regulations, the speed limit for vehicles in non-built-up areas is set at 80 km/h by default, which is lower than in Poland. Only in justified cases—following the opinion of UP and an analysis by *Statens vegvesen*—can this limit be increased through appropriate road signs.

Secondly, Polish regulations (Article 21(3) of the Road Traffic Act) allow for speed reductions in non-built-up areas if road safety considerations justify it. However, **the default speed limits are still higher than those in Norway.**

In other words, **Norwegian regulations are more cautious, preventive, and precautionary**. SV, based on analyses and accident statistics on public roads, may consider raising the speed limit after obtaining prior approval from UP.[100]

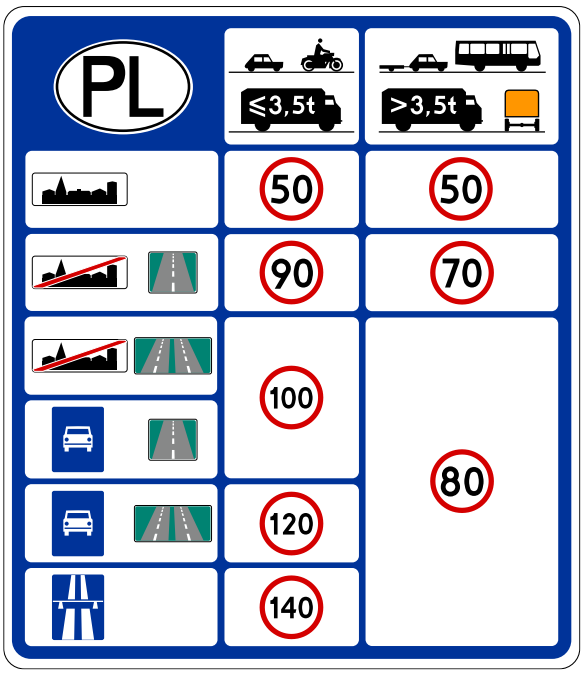
In Poland, the situation is different. Initially, a public road in an undeveloped area is allowed for use based on specified technical parameters, with a legislated speed limit (e.g., 140 km/h, 120 km/h, or 90 km/h). Subsequently, in response to the occurrence of dangerous traffic incidents (fatal accidents, numerous violations, collisions), speed restrictions may be considered.[101]

In Norway, there is a noticeable reversal in the approach to managing speed on public roads. This solution may positively influence achieving an optimal speed limit and, consequently, an appropriate level of RTS on a given public road.

It is also worth noting that Polish regulations in Article 20(3) of the Road Traffic Act introduce distinctions based on the type of vehicle (passenger car, motorcycle, or truck up to 3.5 tons, combination of vehicles, non-standard vehicles) regarding permissible speeds. Consequently, this has led to frequent criticism of Polish traffic management authorities for the lack of clarity in speed limit rules on public roads. A tangible example of this issue is the design of the road sign D-39 *"permissible speeds"* compared to the similar informational sign 560.1 *"information board on road conditions and traffic"* in Norway.

Diagram 3. Sign 560.1 "information board on road conditions and traffic"

Diagram 4. Sign D-39 "permissible speeds"



Source: Section 12, item 560 (example) of the Norwegian Act on Road Signs, Road Markings, Traffic Lights, and Instructions for Their Use of 18 June 1965.

[100] See: § 26 of the Norwegian Act on Road Signs, Road Markings, Traffic Lights, and Instructions for Their Use of 18 June 1965 (publisher: ZA-2022-12-22-2460).

[101] It should be noted that this approach still prevails among road managers in Poland, although it is countered by road safety audits conducted under Articles 24i and 24j of the Public Roads Act.

4.4.6. RTS in work zones

RTS is significantly impacted by the proper protection and marking of roadwork sites. These areas present inherent risks and require particular caution from drivers. The principles for implementing temporary changes to traffic management differ between the Norwegian and Polish systems. One key difference is that, according to §§ 32 and 33 of the Norwegian regulations on road signs, road markings, traffic signals, and their implementation from 18 June 1965, the Norwegian Police do not participate in the approval of work site locations, plans, or safety measures.

However, as shown in the relevant table included in the annexes (Annex 3), there are significant differences between Poland and Norway in correcting deficiencies in roadwork signage. A key difference is that, according to § 34(1) of the Norwegian Act – Regulations on Road Signs, Road Markings, Traffic Lights, and Instructions for Their Use dated June 18, 1965, the police or the competent road authority, if they determine that the existing roadwork signage poses a threat to road safety, have the legal authority to immediately halt (suspend) the work.

At the same time, the person responsible for overseeing roadworks receives a reprimand from the police or the road authority for identified deficiencies. If the same individual receives two reprimands within a year for improper maintenance of temporary traffic management at roadwork sites, their ability to oversee roadworks on public roads is revoked for one year.[102] Thus, inadequate roadwork signage that endangers road safety impacts both the professional and personal life of the person responsible for the roadworks.

This is a significant difference compared to Polish solutions, where the individual responsible for maintaining temporary traffic management at roadworks sites[103] essentially risks only administrative penalties under Article 84 of the Code of Offences[104] or Article 85 § 1 of the Code of Offences.[105] **In Polish law, neither the Road Traffic Act nor the Public Roads Act provides the road authority with the authority to suspend roadworks through an administrative decision or revoke the ability to supervise roadworks from the project manager.**[106]

The only mechanism available is the threat of revoking the decision allowing road occupancy under Article 162 § 1 point 2 of the Code of Administrative Procedure, along with the imposition of monetary penalties for road occupancy without authorization under Article 40 § 12 of the Public Roads Act. This prompts the contractor to consider, on a cost-benefit basis, the placement of all road signs and road safety devices as specified in the approved temporary traffic management plan.

[102] § 34, Subsection 2 of the Norwegian Act on Road Signs, Road Markings, Traffic Signals, and Instructions for Their Use of June 18, 1965.
[103] § 11, Point 2 in conjunction with § 12, Subsection 1 of the Regulation of the Minister of Infrastructure of September 23, 2003, concerning detailed conditions for traffic management on roads and supervision of this management.
[104] A fine of PLN 150, according to Table B of the Regulation of the Prime Minister of November 24, 2003, concerning the amount of fines imposed through penal tickets for selected types of offenses.
[105] A fine of PLN 400, according to Table B of the Regulation of the Prime Minister of November 24, 2003, concerning the amount of fines imposed through penal tickets for selected types of offenses.
[106] A similar regulation in Poland exists only in the context of the Police's authority to interrupt events conducted under the "special use of roads" provisions, based on Articles 65 to 75j of the Road Traffic Law (Article 65g(3) of the Road Traffic Law – the Police's authority to interrupt events that threaten road traffic safety).

4.4.7. Requirements for vulnerable road users

Norwegian regulations regarding the use of personal protective equipment while operating a motor vehicle, as stipulated by the regulations effective from October 1, 1979, are noteworthy.[107] In the Polish legal system, there is no analogous law, and matters related to personal protective equipment are addressed only in specific sections of the Polish Road Traffic Law.

It is worth mentioning the **requirement for children up to 15 years of age to wear protective (bicycle) helmets while using certain types of vehicles** (e.g., small electric motor vehicles)[108] on public roads. Although Norway does not have a universal helmet requirement for adult cyclists, SV, in collaboration with *Trygg Trafikk*, conducts campaigns encouraging helmet use and performs durability tests on helmets designed for cyclists.[109]

Similarly, motorcycle riders, two-wheeled, or three-wheeled vehicle operators are required to wear protective helmets (as in Poland).[110] However, Norwegian regulations mandate the use of homologated helmets that meet specific standards and possess the appropriate certifications.

In both Poland and Norway, **failure to wear seat belts affects both the driver and the passenger**. According to § 3 of the Act on the Use of Personal Protective Equipment While Operating Motor Vehicles, dated 1 October 1979, in conjunction with § 1, paragraph 13 of the Act on the Imposition of On-the-Spot Fines in Traffic Matters, this results in a penalty of 3,400 NOK (approx. 1,250 PLN).

4.5. Drivers and the penalty points system

In both Poland and Norway, in addition to fines for traffic violations, there is a penalty points system for drivers. Exceeding the permissible number of penalty points generally results in the loss of driving privileges or the need to retake the driving test to re-evaluate skills. In Norway, these matters are governed by the Act on Penalty Points dated 19 September 2003 (as amended from 1 January 2021),[111] while in Poland, they are regulated by the Act on Drivers dated 5 January 2011 and the Regulation of the Minister of Internal Affairs and Administration dated 14 September 2023 on the Registry of Drivers Violating Traffic Laws.

4.5.1. Mechanism of calculating penalty points

For each traffic violation, a specific number of penalty points is assigned in both Poland and Norway. A key difference is that in Poland, a driver cannot exceed **24 penalty points** within a year, while in Norway, a driver cannot accumulate more than **8 penalty points** over a three-year period. It is therefore important to assess the significance of a single penalty point in both Poland and Norway, as this influences the effectiveness of the system in deterring undesirable driver behaviours.

[107] Act on the Use of Personal Protective Equipment While Driving a Motor Vehicle of 1 October 1979 (publisher: ZA-2023-07-03-1228).
[108] See: § 4 of the Act on the Use of Personal Protective Equipment While Driving a Motor Vehicle of 1 October 1979.
[109] *Rapport – Den norske hjelmtesten 2024 Sykkelhjelmer for voksne. Trygg Traffik*, 2024.
[110] See: Article 40(1) of the Road Traffic Act.
[111] The Norwegian Act on Penalty Points of 19 September 2003 (Publication: ZA-2020.12.11.2699).

Table 17. Procedure and consequences for allocating penalty points for traffic violations

	Poland	Norway
Maximum numer of penalty points	24	8
Time period	1 year	3 years
Averaged over 1 year	24 penalty points	2.66 penalty points
Notification of penalty points	No official notification (drivers can check penalty points themselves)	Official notification sent by mail when 4 points are accumulated, with a warning about the potential loss of driving privileges
Consequences (sanctions) for exceeding penalty points	• Requirement to pass a driving test (requalification exam) • If the test is not passed, driving privileges are revoked, and the driver must undergo training and pass the state driving exam again	Loss of driving privileges for 6 months
Mitigating circumstances	None	Possibility of reducing the disqualification period to less than 6 months under special circumstances (e.g. professional drivers, personal hardship, the last offence was minor and did not seriously endanger RTS)
Driver's status after sanction	Penalty points are reset	Penalty points are reset
Procedure	Administrative	Judicial (criminal)
Deciding authority	Starost (country governor)	Court
Possibility of attending training courses to reduce penalty points	Yes	No

Source: own elaboration based on: Norwegian Act on Penalty Points of 19 September 2003; Polish Act on Drivers of 5 January 2011; Regulation of the Minister of Internal Affairs and Administration of 14 September 2023 on the Register of Drivers Violating Traffic Regulations.

The Norwegian demerit points system emphasizes informing drivers about the possibility of losing their driving licence. Section 3 of the Norwegian Penalty Points Act of 19 September 2003 requires *"immediate written notification of demerit points and the potential consequences of accumulating additional points"* for individuals who violate traffic regulations. This approach has significant preventive, educational, and proactive value. In contrast, such a system does not exist in Poland, where drivers often become aware that they have exceeded the 24-point threshold only when they have actually surpassed it. Nevertheless, in Poland, there is the possibility (restored) of reducing the number of penalty points under Article 17, section 6a of the Act of 2 December 2021 amending the Act on Road Traffic and certain other acts[112].

Data on demerit points is recorded in the Norwegian Central Demerit Points Register, which is maintained by the Police.

[112] Article 17, section 6a of the Act of 2 December 2021 amending the Act on Road Traffic and certain other acts (Journal of Laws 2021, item 2328).

4.5.2. Severity of the penalty points system for drivers

An additional consideration is the severity (degree of harshness) of the demerit points system for specific analogous traffic violations in Poland and Norway. At this stage of the analysis, it is important to note that a direct comparison cannot be made, and any comparison can only be indicative. This is due to the different terminology used for traffic violations in Poland and Norway. Thus, the following comparison pertains to the most common traffic violations, presented at a certain level of generality.

Table 18. Number of penalty points imposed for selected traffic violations

Type of violation (according to Norwegian system)	Poland	Norway
Speeding below 15 km/h (with a speed limit up to 60 km/h)	1–2	2 (6)*
Speeding above 15 km/h (with a speed limit up to 60 km/h)	3–15 (depending on the speed)	3 (9)*
Speeding below 20 km/h (with a speed limit up to 70 km/h)	1–2	2 (6)*
Speeding above 20 km/h (with a speed limit up to 70 km/h)	3–15 (depending on the speed)	3 (9)*
Running a red light	15	3 (9)*
Overtaking on a pedestrian crossing	15	3 (9)*
Overtaking in a no-overtaking zone	15	3 (9)*
Failing to yield to a pedestrian at a pedestrian crossing	15	3 (9)*
Failing to yield at intersections or when joining traffic	8–12	3 (9)*
Not wearing seat belts	5	3 (9)*
Using a mobile phone while driving without a hands-free system	12	3 (9)*

* The number in parentheses indicates the number of points multiplied by 3 to standarize with Poland's 1-year penalty point validity period.

Source: own elaboration based on: the Norwegian Act on Penalty Points of 19 September 2003, the Act on Drivers of 5 January 2011, and the Regulation of the Minister of the Internal Affairs and Administration of 14 September 2023 on the Records of Drivers Violating Traffic Regulations.

It seems that the Norwegian penalty points system for traffic violations is similar to the Polish system. It is less detailed, but the longer period for accumulating penalty points (3 years) requires greater caution from Norwegian drivers. This is illustrated by the following conceptual comparison of the consequences of traffic violations.

Table 19. Conceptual comparison of the consequences of traffic violations

Traffic violations committed by a potential driver over 1 year intervals (conceptual example)	Poland	Norway
2022: Speeding by 35 km/h with a permitted speed of 70 km/h	9	3 (9)*
Number of penalty points after 1 year	0	3 (9)*
2023: Failure to yield to a pedestrian at a crosswalk.	15	3 (9)*
Number of penalty points after another year (total of 2 years):	0	6 (18)* Driver receives a written warning about serious traffic violations that could lead to the loss of driving privileges
2024: Using a mobile phone while driving without a hands-free set	12	3 (9)*
Number of penalty points after another year (total of 3 years):	0	9 (27)* (exceeding the permitted 8 penalty points)
Number of penalty points assuming the Norwegian system were applied in Poland:	36	Not applicable
Actual legal consequences	The driver continues to drive on public roads	The driver's license is suspended for 6 months

*** The number in parentheses indicates the number of points multiplied by 3 to align with the Polish system's 1-year penalty points period.**

Source: own elaboration based on: the Norwegian Act on Penalty Points dated 19 September 2003, the Act on Drivers dated 5 January 2011, and the Regulation of the Minister of Internal Affairs and Administration dated 14 September 2023 on the Records of Drivers Violating Traffic Regulations.

The result of the above synthetic comparative analysis is the conclusion that, in principle, the proportional amount of penalty points assigned for similar traffic violations is analogous in Poland and Norway. However, in Norway, **the 3-year validity period** for penalty points significantly influences driver behaviour in terms of adherence to traffic regulations. In contrast, in Poland, according to Article 98, Section 5 of the Act on Drivers, as of 17 September 2023, the validity period for penalty points has been restored to **one year** after which accumulated points are removed from the driver's record.[113] This appears to be the key difference in the driver penalty point systems between Poland and Norway, affecting driving behaviour.

[113] It should be noted that from 1 January 2022 to 16 September 2023, penalty points imposed on drivers for traffic violations were removed only after a period of 2 years.

4.5.3. Rules for treating new drivers („young drivers")

From the perspective of Road Traffic Safety (RTS) principles, the care of new road users who become drivers—often referred to colloquially as **"young drivers"**—is of significant importance.

In Poland, the relevant regulations are found in Article 135(1)(d) of the Road Traffic Law, which sets out special rules for "young drivers." In contrast, Norwegian regulations provide specific provisions for such drivers under § 3 of the Norwegian Act on Penalty Points dated 19 September 2003.

Table 20. Probationary periods for new drivers

	Poland	Norway
Duration of probationary period[114]	**1 year:** reduced number of penalty points to 20 points **2 years:** no serious safety offenses or three minor offenses[115] (mainly speeding)	2 years
Special provisions during probation	• Reduced number of penalty points • Strict treatment of repeat offenses	Double penalty points for each traffic violation during the probationary period
Sanction	License suspension and retaking the driving test	License suspension for 6 months

Source: own elaboration based on: Norwegian Act on Penalty Points dated 19 September 2003; Norwegian Act on Driving Licenses dated 19 January 2004; Road Traffic Law dated 20 June 1997; Act on Drivers dated 5 January 2011.

Long-term Norwegian regulations are more restrictive, while Polish probationary period measures are aimed at eliminating the most harmful behaviours from a road safety perspective.

For example, consider a situation where a driver, six months after passing their driving test, exceeds the speed limit by 35 km/h. In Poland, the driver would only receive a fine and 9 penalty points. In Norway, however, the driver would automatically receive 6 penalty points (i.e., double the number of points, 2 x 3 penalty points) and would be notified in writing of the further legal consequences of accumulating penalty points. As a result, for the next 2.5 years, the Norwegian driver, with 6 penalty points on record, must exercise particular caution and attention, as any further violations could lead to the suspension (loss) of their driving license.

For example, consider a situation where a driver, six months after passing their driving test, exceeds the speed limit by 35 km/h. In Poland, the driver would receive only a fine and 9 penalty points. In Norway, however, the driver would automatically receive 6 penalty points (i.e., double the standard number of points, 2 x 3 penalty points) and would be notified in writing of the further legal consequences of accumulating penalty points. Consequently, for the next 2.5 years, the Norwegian

[114] Based on Article 14, section 1 of the Act of 9 May 2018 amending the Act on Road Traffic and certain other acts (Journal of Laws 2018, item 957), the provisions of this chapter do not apply until the implementation of technical solutions that enable the transmission of data under the principles specified in Articles 100aa – 100aq of the Polish Road Traffic Act of 20 June 1997. According to Article 14, section 2 of the Act of 9 May 2018 amending the Act on Road Traffic and certain other acts (Journal of Laws 2018, item 957), the minister responsible for digital affairs announces in his official journal a statement defining the deadline for implementing the technical solutions that will activate the operation of the trial period mechanism.

[115] This pertains to offenses specified in Articles 86 § 1, 1a or 2, Article 86b § 1, Article 87 § 1, Article 92a § 2, Article 92b, Article 97a, or Article 98 of the Act of May 20, 1971, Code of Offenses.

driver, with 6 penalty points on record, must exercise particular caution and attention, as any further violation could lead to the suspension (loss) of their driving license.

If the same offense is committed again within a short period (i.e., within a year), the Norwegian "young" driver would accumulate 12 penalty points and their driving license would be suspended. In contrast, a Polish "young" driver could commit the same offense for the second time within the same year, resulting in 18 penalty points. As long as they remain within the limit of 20 penalty points and do not commit three similar offenses within 2 years, they may still continue to drive on public roads.

Clearly, the Norwegian mechanism—while not as extensively developed as the Polish system for "young" drivers—is far more restrictive for individuals who are beginning their driving experiences.

4.5.4. Driver education system. Driving after the age 65.

In reference to the driver education system, it is important to note that according to the Norwegian Road Traffic Act of 19 January 2004,[116] the following age requirements are established for obtaining various driving license:

1. **Class AM** – Moped – **16 years**
2. **Class A** – Motorcycle, direct acquisition – **24 years**
3. **Category A** – Motorcycle (minimum 2 years of experience with category A2 motorcycle)
4. **Class A2** – Medium-powered motorcycle – **18 years**
5. **Class A1** – Light motorcycle – **16 years**
6. **Class B** – Passenger car, van – **18 years**
7. **Class C** – Heavy goods vehicle – **21 years**
8. **Class C1** – Light goods vehicle – **18 years**
9. **Class D** – Bus – **24 years**
10. **Class D1** – Minibus – **21 years**
11. **Class BE** – Trailer for category B – **18 years**
12. **Class CE** – Trailer for category C – **21 years**
13. **Category C1E** – Trailer for category C1 – **18 years**
14. **Class DE** – Trailer for category D – **24 years**
15. **Class D1E** – Trailer for category D1 – **21 years**.

These requirements are similar to Polish regulations as outlined in Article 8, Section 1 of the Road Traffic Act. However, differences exist in terms of preparation for the driving test, the rules for taking the test, and the regulations governing driving on public roads for individuals over 65 and 70 years of age.

The main differences compared to Polish regulations are as follows:

- Recommendation to prepare for the national driving test by completing a minimum of 1,000 hours of practical driving education (in Poland, this is 30 hours).
- Requirement to practice driving at night (in darkness).
- Requirement to learn driving in adverse conditions (ice, snow, heavy rain, black ice).

[116] Norwegian Road Traffic Act of 19 January 2004 (publisher: ZA-2024-04-16-641).

- Recommendation to undertake as many trial drives with an instructor as possible.
- Possibility to complete driving courses in public schools (starting from 9th grade; *ungdomsskole* – lower secondary school).
- Separate treatment of driving licenses for vehicles with automatic transmissions versus manual transmissions (a person taking the test for an automatic transmission cannot drive vehicles with a manual transmission).[117]
- Mandatory participation in first aid training and road response procedures for serious road accidents.
- Special provisions for individuals over 65 and 70 years of age[118]:
    - Persons over 65 can obtain or renew a driving license for no more than 5 years based on a medical certificate confirming their psychophysical abilities.
    - Persons over 70 can obtain or renew a driving license for no more than 1 year based on a medical certificate confirming their psychophysical abilities.
- Courses for drivers over 65 years of age provided by *Statens vegvesen* (SV).

Particular attention should be paid to the refresher courses for drivers over 65 years of age, organized by the Norwegian Road Administration. The course consists of two sessions, each lasting 3.5 to 4 hours. During these sessions, driving skills are not assessed; instead, the focus is on discussing current road traffic regulations and appropriate behaviours in the following areas:

- Priority rules.
- Roundabout navigation rules.
- Compliance with road signs.
- Adherence to traffic signals.
- Driving on motorways and fast roads.
- Overtaking rules.
- Parking regulations.

In 2023, SV conducted 65 of these courses with 23 participants (1,495 drivers over the age of 65).[119] It is evident that Poland does not have similar provisions, particularly for senior drivers. Noteworthy are Sections 4–18 of the Norwegian Road Traffic Act of January 19, 2004,[120] which precisely classify medical conditions that either disqualify an individual from obtaining a driving license or **require annual (or biennial)** mandatory medical consultations to issue the necessary certification. These conditions include mental disorders, diabetes, heart failure, valve diseases and cardiomyopathy, implanted defibrillators, arrhythmias, sleep disorders, epilepsy, seizure disorders, neurological diseases, and vision impairments. In Poland, similar requirements exist but at a more general level.[121] A medical examiner assesses the suitability of a candidate for driving based on a medical examination.[122]

[117] See: § 4(3) of the Norwegian Act on Driving Licenses of 19 January 2004 (publisher: ZA-2024-04-16-641).
[118] See: § 4(1) and §§ 45 and 46 of the Norwegian Act on Driving Licenses of 19 January 2004 (publisher: ZA-2024-04-16-641).
[119] Source: https://vegpensjonistene.no/foreningene/hedmark/65-kurs-for-vegpensjonistene/
[120] Publisher: ZA-2024-04-16-641.
[121] See: § 5 of the Regulation of the Minister of Health of 5 December 2022 regarding medical examinations for individuals applying for driving licenses and drivers.
[122] See: Articles 75–79 of the Act on Drivers of 5 January 2011.

4.5.5. Consequences of losing driving licenses

Another distinct issue is the consequences of losing driving privileges or the effects of having one's driving license suspended for a specified period. These matters are regulated by the Act on the Loss of Motor Vehicle Driving Licenses of 19 December 2003.[123] The purpose of this act is to collectively address all circumstances and events in road traffic that lead to the suspension or revocation of driving licenses. These situations include:

- Committing a road traffic offense (e.g., road accidents, driving under the influence of alcohol, causing a road accident while intoxicated, and others)
- Committing a road traffic violation (e.g., driving after consuming alcohol, violating road signs or signals, exceeding speed limits, and others)
- Exceeding the permissible number of 8 penalty points.

In the Polish legal system, there is no equivalent act. Instead, rules related to the suspension of driving licenses or the revocation of driving privileges are included in the Code of Offenses, the Penal Code, the Road Traffic Act, and the Act on Drivers.

In the Norwegian system, the period during which one is not allowed to drive is referred to as *"loss of driving privileges,"* while in Poland it is known as *"suspension of the driving license."* However, it is important to note § 8 (2) and (3) of the Norwegian Act on the Loss of Motor Vehicle Driving Licenses of 19 December 2003.[124] According to these provisions:

- Any loss of driving **privileges for a period exceeding 6 months but less than a year results in the necessity of retaking the practical driving test**.
- A loss of driving privileges exceeding one year requires retaking both the theoretical and practical state driving tests.

This approach is somewhat different from the Polish system, where a driver's license suspended for 3 or 6 months (according to Article 102 (2) of the Act on Drivers) due to certain traffic violations is returned without the need for a retest of driving skills through a state driving exam. However, it should also be noted the Polish regulations in Article 104a, section 5 of the Act on Drivers, which states that individuals whose *"driving rights have been suspended are considered not to have driving rights to the extent and during the period for which these rights are suspended."*

Significant differences arise regarding the duration of the driving license suspension depending on the offense committed by the driver. This issue can be analysed in the context of the differences between the Polish and Norwegian systems regarding the suspension of driving licenses for speeding violations.

[123] Publisher: ZA-2023-10-18-1646.
[124] Publisher: ZA-2023-10-18-1646.

Table 21. Principles of driving license suspension and legal consequences for drivers

Speed violation criteria: Allowed speed 50 km/h in built-up area	Poland (system response)	Norway (system response)
Exceeding by up to 25 km/h	Fine and penalty points	Fine and penalty points
Exceeding by 26 – 32 km/h	Fine and penalty points	Fine, penalty points, and license suspension from 3 to 6 months
Exceeding by 32 – 40 km/h	Fine and penalty points	Fine, penalty points, and license suspension from 6 to 9 months *
Exceeding by 41 – 45 km/h	Fine and penalty points	Fine, penalty points, and license suspension from 9 to 12 months *
Exceeding by 46 – 50 km/h	Fine and penalty points	Fine, penalty points, and license suspension from 12 to 15 months *#
Exceeding by 51 – 55 km/h	Fine, penalty points, and 3-month license suspension	Fine, penalty points, and license suspension from 15 to 18 months *#
Exceeding by 56 – 60 km/h	Fine, penalty points, and 3-month license suspension	Fine, penalty points, and license suspension from 18 to 21 months *#
Exceeding by 61 – 65 km/h	Fine, penalty points, and 3-month license suspension	Fine, penalty points, and license suspension from 21 to 24 months *#
Exceeding by 66 – 70 km/h	Fine, penalty points, and 3-month license suspension	Fine, penalty points, and license suspension from 24 to 27 months *#
Conditions for non-compliance with driving ban	Extension of the ban period by an additional 3 to 6 months (Article 102 (1d) of the Act on Drivers)	Extension of the ban period by an additional period of at least 6 months (§ 7 (1) of the Norwegian regulations on the loss of driving licenses from December 19, 2003)

*** If the suspension period exceeds 6 months, the driver must retake the practical driving test.**

 # If the suspension period exceeds 12 months, the driver must retake both the theoretical and practical driving tests.

Source: own elaboration based on: Norwegian Act on the Loss of Motor Vehicle Driving Licenses of 19 December 2003 (publisher: ZA-2023-10-18-1646), Polish Road Traffic Law of 6 June 1997, Polish Vehicle Drivers Act of 5 January 2011.

As the table above illustrates, the Polish system for suspending driving licenses remains relatively passive in the range of speeding violations up to 50 km/h. Only with speed exceedances over 50 km/h does the system react by suspending the driving license for 3 months. This penalty is disproportionately lower compared to the Norwegian system, where similar speeding violations result in a driving ban of at least 15 months! Additionally, this generates the necessity to retake both theoretical and practical parts of the state driving exam for suspensions exceeding 12 months.

In Norway, the only authority that can shorten the driving ban period established by the court, upon request from the person punished, is the Chief of Police[125]. However, such a reduction can only be granted under exceptional circumstances. This appears to be a fundamental element in the Norwegian speed management system, significantly impacting road safety levels.

Additionally, Norway applies similar measures for speed violations exceeding administratively set limits of 30 km/h, 40 km/h, 60 km/h, 70 km/h, 80 km/h, 90 km/h on expressways, 90 km/h on

[125] See: § 9 ust. 1 Norwegian regulations on the loss of driving privileges for motor vehicles dated December 19, 2003.

highways, 100 km/h on highways, and 110 km/h on highways.[126] This applies to both built-up and non-built-up areas.

In contrast, Polish regulations do not provide for driving license suspension for significant speeding on roads outside built-up areas.

4.6. Indirect legal mechanisms influencing RTS

Notably, the improvement of RTS is also influenced by preventive measures that are not always directly related to traffic regulations or vehicle operation rules. It is clear that driving under the influence of alcohol poses a significant challenge for any country concerning RTS issues. These mechanisms include **the regulation of alcoholic beverage sales and approaches to potential drivers who misuse alcohol**.

4.6.1. Management of the alcohol beverage sales system

Both the Polish and Norwegian systems recognize the harm of alcohol abuse and include educational programs addressing the detrimental effects of alcoholism on individuals, family life, and society.[127] However, there are some differences between the countries in their classification and regulation of alcoholic beverages.

Table 22. Classification of alcoholic beverages

	Poland	Norway
Non-alcoholic beverages	Up to 0.5%	Up to 0.7%
Low-alcohol beverages	0.5% to 4.5%	0.7% to 2.5%
Medium-alcohol beverages	4.5% to 18%	**Group I:** 2.5% to 4.7% **Group II:** 4.7% to 22%
High-alcohol beverages	Above 18%	**Group III:** above 22%

Source: own elaboration based on: the Polish Act of October 26, 1982, on the Prevention of Alcoholism and Alcohol Abstinence, and the Norwegian Alcohol Sales Act of June 2, 1989.

A significant difference between Polish and Norwegian approaches lies in the legal age for purchasing alcoholic beverages. In Poland, the uniform age limit is 18 years (legal age). Such individuals—who may also be drivers with vehicle licenses—can purchase high-proof alcohol without any restrictions. In Norway, however, there is a notable distinction in this regard. According to § 1, subsection 5 of the Norwegian Act on the Sale of Alcoholic Beverages of June 2, 1989, beverages classified as non-alcoholic, low-alcohol, and medium-alcohol can be purchased by individuals aged 18 and over, whereas high-proof alcohols **(Group III)** can only be purchased by those **who are 20 years old**.

[126] See: § 2, subsection 2 of the Norwegian Act on the Loss of Driving Licenses for Motor Vehicles of December 19 2003.
[127] See: Article 5 of the Prevention of Alcoholism and Promotion of Sobriety Act of 26 October 1982; § 1, subsection 1 of the Norwegian Act on the Sale of Alcoholic Beverages of June 2 1989 (publisher: ZA-2021-05-07-34).

Norwegian regulations on the distribution and sale of alcoholic beverages also differ significantly from Polish conditions.

Table 23. Rules for the sale and advertising of alcohol beverages

	Poland	Norway
Sale hours on weekdays	24/7 without restrictions	08:30 – 18:00
Sale hours on Saturdays or days before public holidays	24/7 without restrictions	10:00 – (15:00) 16:00[128]
Sunday and holiday trading hours	24/7 without restrictions[129] (applies to establishments not covered by Sunday trading bans)	Complete ban on sales
Possibility of limiting sale hours by local authorities	Yes[130]	Yes
Places of sale	Points with municipal/issuing authority permit	• Low-alcohol and medium-alcohol beverages from Group I: points with municipal/issuing authority permit • Medium-alcohol beverages from Group II and high-alcohol beverages from Group III: points with municipal/issuing authority permit + mandatory sale in state-run *AS Vinmonopolet*
Advertising of alcoholic beverages	Allowed for beer up to 4.5% with significant time restrictions (ban between 06:00 – 20:00)	No (complete ban)
Legal consequences of violating the above rules	• Fine • For advertisements, fines from PLN 10,000 – 500,000	• Fine or imprisonment from 6 months to 2 years • For high-alcohol beverages, imprisonment up to 2 years

Source: own elaboration based on: the Prevention of Alcoholism and Promotion of Sobriety Act of 26 October 1982, and the Norwegian Act on the Sale of Alcoholic Beverages of June 2, 1989.

Another important issue is the locations for the sale, consumption, and serving of alcoholic beverages. Norway operates under a more restrictive system in this regard. The above table illustrates this, but it does not examine the necessity of obtaining a permit issued by the mayor (or equivalent official) in Poland based on the location of the sales point. Similarly, it does not consider the administrative legal permit required in Norway. The comparative table available in the

[128] At the same time, according to § 3(4) of the Norwegian Act on the Sale of Alcoholic Beverages dated June 2, 1989, the Ministry of Health may temporarily impose bans on the sale of alcohol on Saturdays and days preceding holidays. The closing time for the sale of alcoholic beverages depends on the "Group" of the alcoholic beverage.

[129] It applies to establishments that are legally exempt from the statutory ban on Sunday trading. According to Article 6(1)(1) of the Act of January 10, 2018, on Restricting Trade on Sundays and Public Holidays and on Certain Other Days, places where trading can occur **without restrictions** (including the sale of alcoholic beverages) are liquid fuel stations.

[130] Exceptions occur in situations where a local government unit (Municipality) may impose local restrictions on the hours of alcohol sales. According to statistics from the National Centre for Counteracting Addictions, approximately **10%** of municipalities in Poland have utilized this option, often limiting alcohol sales to 10:00 PM.

annexes (Annex 4) focuses on the places of sale, distribution, or tasting of alcoholic beverages, which are significant in the context of RTS.

The analysis clearly indicates that **the Norwegian system of distribution, sale, and serving of alcoholic beverages is significantly more restrictive**. This is particularly true for places where alcohol is sold that are related to road traffic either **indirectly** (roads, squares, streets, parks, events, restaurants, buffets, bars) or **directly** (fuel stations).

A key aspect significantly impacting the level of RTS is the top-down, statutory (irrevocable by local regulations) **absolute ban on the sale of alcoholic beverages at fuel stations**. In Poland, the pioneering city of Toruń has introduced a system of a 24-hour ban on the sale of beverages over 4.5% through local legislation, which met with significant resistance from local businesses.[131] Currently, legislative work is underway in Poland on relevant regulations, but it is uncertain when they will be introduced (expected in 2025 or later) and to what extent. The public debate does not address a complete ban on alcohol sales at fuel stations, but rather focuses on time restrictions.

4.6.2. Legally permissible blood alcohol concentrations while driving

The norms for permissible blood alcohol concentration levels for drivers are similar in both the Polish and Norwegian legal systems, with minor differences.

Table 24. Legal qualification of blood alcohol concentration while driving

	Poland	Norway
Legal threshold for insignificant alcohol content	Up to 0.2 ‰ (up to 0.1 mg/l)	Up to 0.2 ‰ (up to 0.1 mg/l)
State of alcohol use	0.2 ‰ to 0.5 ‰ (0.1 mg/l to 0.25 mg/l)	0.2 ‰ to 0.5 ‰ (0.1 mg/l to 0.25 mg/l)
State of driving under the influence	Above 0.5 ‰ (above 0.25 mg/l)	Above 0.5 ‰ (above 0.25 mg/l)
State of severe alcohol influence	Not applicable	Above 1.2 ‰ (above 0.6 mg/l)

Source: own elaboration based on: Art. 46, § 2 of the Prevention of Alcoholism and Promotion of Sobriety Act of 26 October 1982, and §§ 22 and 31 of the Norwegian Road Traffic Act of June 18, 1965 (publisher: ZA-2023-12-20-116).

Driving with a blood alcohol concentration up to 0.2‰ is permissible in both countries. A concentration of alcohol from 0.2‰ to 0.5‰ is considered a **state of having consumed alcohol**, which is associated with legal penalties for the driver. Only a blood alcohol concentration above 0.5‰ is classified as driving **under the influence of alcohol**, resulting in serious legal consequences for the driver. Norwegian regulations also distinguish a **state of severe alcohol influence**, defined as 1.2‰, which leads to increased sanctions at the investigative level by the police/prosecution and in court proceedings.

[131] Resolution No. 538/17 of the Toruń City Council of February 23, 2017 (Journal of Laws No. 920), was implemented only after the final ruling by the Supreme Administrative Court in Warsaw on August 3, 2021, with reference II GSK 1389/18, which overturned the judgment of the Voivodeship Administrative Court in Bydgoszcz dated January 16, 2018, with reference II SA/Bd 796/17.

It should be noted that Norway has **mechanisms to address repeat offenses and crimes in road traffic caused by drunk drivers**. These include the possibility for the court, according to § 37 letter f of the Norwegian Penal Code of May 20, 2005, to mandate a driver to participate in a program against driving under the influence of alcohol or other intoxicating substances. Often, a convicted person's consent to participate in such a program is considered a mitigating factor that positively influences the sentencing, thus motivating participation in the program.

In Poland, there are no analogous provisions. A criminal court dealing with traffic offenses or crimes can only impose a driving ban. It is only in cases where a person is strongly addicted to alcohol, causing family breakdown, demoralization of minors, and public disturbances, that there is a possibility to direct the person for an assessment of alcohol addiction and appropriate treatment (Article 24 and 25 of the Act of October 26, 1982, on the upbringing in sobriety and prevention of alcoholism). However, these solutions are not related to driving under the influence of alcohol.

4.6.3. RTS education in public schools

In the Norwegian legal system, there are opportunities to conduct **road safety training in public schools beyond the basic road safety education classes**. According to § 5, subsection 13 of the Norwegian Act on Traffic Training of 1 October 2004,[132] permission to conduct road traffic training in schools (including driving lessons for specific vehicle categories) is issued by SV.

Norwegian youth have the option, in addition to mandatory RTS education, to choose an **elective subject called "Traffic Rules,"** within which classes on basic road traffic information are conducted, preparing future drivers (§ 6, subsection 4 of the Norwegian Road Traffic Training Act of 1 October 2004).

According to § 8, subsection 5, letters a–c of the Norwegian Road Traffic Training Act of 1 October 2004, students in the ninth grade or higher may enrol in the elective subject "Traffic Rules," with each group not exceeding 18 students. If a student attends at least 80% of the 57 hours of this subject and participates in first aid training as part of the elective "Traffic Rules" course, they may, under preferential conditions, take the state driving test.[133] It is also important to note that oversight of road safety education in schools is the responsibility of the SV (Norwegian Road Administration). This is a significant difference compared to the Polish model, where road safety educational and informational activities in schools are generally conducted by the Police.

A constant element of the Polish Police's efforts is the recurring program "Safe Way to School," in which delegated police officers give lectures to children about safety on their way to and from school.[134] During these lectures, police officers discuss the applicable road safety rules and highlight the most dangerous behaviours in traffic. Noteworthy is also the individual campaign by GDDKiA in 2021, which involved displaying educational films for children about road safety.[135] Additionally,

[132] Publisher: ZA-2024-06-20-1186.
[133] For example, he or she will be required to complete additional driving lessons in darkness outside of school, following the general principles applicable to all trainees.
[134] In the years 2022–2023, the Chief Inspectorate of Road Transport was also involved in the campaign.
[135] Source: https://www.gov.pl/web/gddkia/filmy-edukacyjne-dla-dzieci.

historically, the National RTS Council (*Krajowa Rada BRD*)[136] has carried out tasks in this area, focusing on educating teachers about fundamental RTS principles.

However, it should be noted that there is a fundamental difference – educational activities in Poland regarding road safety for school-age children and adolescents **are not legally coordinated but are rather dispersed**. Various institutions, authorities, and entities are involved, and the obligation to provide such education is only very generally outlined in the curriculum for primary school grades IV–VI[137] and in grades VII–VIII (formerly gymnasiums).[138] In Norway, on the other hand, road safety education is taken so seriously that, in addition to separate education on basic traffic rules, there is an optional opportunity to undertake both theoretical and practical parts of a course preparing for driving vehicles (acquiring a driving license). There is also a unified oversight of RTS education, which is managed by SV.

4.7. Crimes and offenses in road traffic

The approach to punishing drivers for violations of traffic regulations is crucial for the functioning of road safety systems in both Poland and Norway. In Norway, the enforcement system at the pre-trial and judicial levels is different from that in Poland. Unlike in Poland, Norway does not distinguish between "traffic offenses" and "traffic crimes" in the same sense. Any violation of the law in Norway is considered a crime of varying degrees, generally governed by the Norwegian Criminal Procedure Act of 22 May 1981.[139] In the Norwegian system, one can thus distinguish, in Polish terminology:

- **Minor traffic offenses (violations),** which may be subject to the Norwegian Act on On-the-Spot Fines for Traffic Offenses of 29 June 1990[140],
- **Serious traffic crimes**, which may be subject to the provisions of the Norwegian Penal Code of 20 May 2005.[141]

In the Polish system, there is a separate Code of Offenses (Articles 84–103 of the Code of Offenses), and the procedure for handling offenses and imposing sanctions is governed by the Code of Offenses Procedure. For road traffic crimes, Articles 42, 47, 173–180a of the Penal Code apply, and the procedure for handling crimes and imposing appropriate sanctions is governed by the Code of Criminal Procedure.

In the event of a serious road traffic accident, the Police (UP) are responsible for performing basic tasks at the scene (photographic documentation, collecting fingerprints from the steering wheel, securing evidence, recording witness details, identifying suspects and victims, and drawing up a sketch of the accident). This information is stored in the Police's digital investigative system called "BL." In the case of a fatal road accident, experts from SV also appear to investigate the technical aspects of the accident in relation to existing road infrastructure. The report of their findings is attached to the Police documentation. After analysing the collected evidence, the Prosecutor

[136] See: https://www.gov.pl/web/infrastruktura/brd-w-szkolach--szkolenia-dla-nauczycieli.
[137] Item II from Annex No. 2 "General Curriculum Basis for Primary Schools" (Grades IV – VI) to the Regulation of the Minister of National Education dated 27 August 2012 on the basis of preschool education and general education in various types of schools.
[138] Item IV in the section "Education for Safety" from Annex No. 4 to the Regulation of the Minister of National Education dated 27 August 2012 on the basis of preschool education and general education in various types of schools.
[139] Publisher: ZA-2024-05-31-25.
[140] Publisher: ZA-2024-01-26-119.
[141] Publisher: ZA-2024-05-31-25.

overseeing the Police's actions decides on the procedural steps to be taken (e.g., filing charges and presenting the case to court). Procedurally, these actions are similar in both the Polish and Norwegian legal systems, despite some differences in terminology.[142]

Significant differences are noticeable in the procedures for imposing and the amounts of fines, as well as in the penalties for the most serious traffic safety offenses.

4.7.1. Procedure for imposing fines

The simplest procedure functioning in both countries is the **system of administrative fines**. According to § 5 of the Norwegian regulations on issuing on-the-spot fines for traffic violations dated 29 June 1990, if an offense committed by a driver is detected, a fine can be imposed on the spot. However, fines cannot be imposed in the following cases under Norwegian law:[143]

- The accused refuses to accept the fine
- There is suspicion of multiple offenses (violations), not all of which can be settled by an on-the-spot fine
- The traffic violation was very serious and posed a significant threat to RTS
- Accumulating penalty points for the violation would result in the loss of driving privileges for a specific category of vehicle, according to § 4 of the Norwegian penalty points law dated 19 September 2003.

The principles are essentially the same as in Articles 95–98 of the Polish Code of Offences Procedure and the Regulation of the Prime Minister dated 22 February 2002 on the Imposition of Fines by Administrative Penalty Notices, with some exceptions.

In Poland, if the imposition of penalty points on a driver would result in the loss of their driving license (exceeding 24 penalty points), the driver can still accept the on-the-spot fine if they agree with the police officer's decision. Subsequently, the driver will receive a relevant decision from Starosta (the county governor), which will direct them to a re-examination and psychological evaluation under the Act on Road Traffic Drivers dated 5 January 2011[144].

Additionally, the list of offences in the Norwegian Regulations on On-the-Spot Fines for Traffic Offences dated 29 June 1990 is limited to the most common traffic violations (speeding, failure to comply with traffic signs and signals, right of way issues, overtaking issues). In contrast, Polish regulations allow for on-the-spot fines to be imposed on drivers for practically any offence listed in Chapter XI of the Code of Offences (offences against road safety and order), with the exception of offences for which a mandatory penalty measure in the form of a driving ban is prescribed.[145]

A significant difference in the Polish system is the regulation of articles 86 § 1 and 3, 86b § 1 and 3, 87 § 1 and 3, 92 § 2 and 3, 93 § 1 and 2, and 94 § 1 and 3 of the Code of Offences, which provide for

[142] See: Polish Code of Criminal Procedure of 6 June 1997 and Norwegian Act on Criminal Procedure of 22 May 1981 (publisher: ZA-2024-05-31-25).
[143] See: § 4 sections 1–4 of the Norwegian regulations on the imposition of fines on-site in road traffic matters dated 29 June 1990.
[144] See: Article 98a section 2 point 1 and Article 136 of the Act on Drivers of Motor Vehicles dated 5 January 2011.
[145] See: Article 96 § 2 of the Code of Proceedings in Misdemeanour Cases in conjunction with Article 87 § 3, Article 93 § 2, and Article 94 § 3 of the Offences Code.

the mandatory or discretionary[146] possibility of a police officer seizing a driver's license on the spot, resulting in a driving ban for a period ranging from 6 months to 3 years (art. 29 § 1 of the Code of Offences). Of course, the final decision on the suspension of the driving license is made by the criminal court. In Norwegian regulations, there are no analogous provisions. However, such a decision can be made by a Norwegian court if the case of the specified offence reaches the Norwegian criminal court.

4.7.2. The amount of fines for traffic offenses

The amount of fines imposed for traffic offenses plays a significant role in preventive measures. In Norway, the following rules apply:

- **GENERAL PRINCIPLE:** the amount of the fine depends on the offender's income, assets, debt, and financial capacity.
- **EXCEPTION:** standardized fines are applied for certain traffic offenses under the Norwegian Regulations on the Imposition of Fines on-Site in Road Traffic Matters dated 29 June 1990.

In contrast, in Poland, the maximum amounts of fines are fixed and clearly defined in Table B of the Regulation of the Council of Ministers of 24 November 2003 on the Amount of Fines Imposed by On-Site Penalties for Selected Types of Offenses. There is no formal income criterion, asset criterion, or financial capacity criterion for the perpetrator. Nevertheless, when determining the measure and amount of the penalty under the Code of Proceedings in Misdemeanour Cases, the criminal court may also consider the perpetrator's actions, attitude, personal circumstances, and income.[147] However, the Polish system legally limits the amount of the fine imposed by the court to specified amounts.[148] Norwegian courts do not have such restrictions.

In other words, if a driver in Norway does not accept the on-site fine offered under the Norwegian Regulations on the Imposition of Fines on-Site in Road Traffic Matters dated 29 June 1990, they risk facing a higher penalty when the case is reviewed by a criminal court.[149] **This is a key motivating factor for offenders to accept fines on the spot, as proposed by the Norwegian Police following the detection of an offense. This system also relieves the police, the judiciary, and the prosecution service.** However, the Norwegian Police have often criticized this system despite its procedural efficiency, citing its *"inherent bias, as all offenders receive the same response for the same violation, regardless of their financial capacity, which deviates from the principle of adjusting fines according to the offender's financial ability."*[150]

In the Norwegian system, it is crucial to note that, for example, exceeding the speed limit by more than 25 km/h on a road with a speed limit of 60 km/h is considered a serious violation of RTS. Such

[146] It is, however, a separate issue whether the court considering the discretionary option of seizing a driving license will decide to implement such a measure. Similarly, the question arises regarding the mandatory period for seizing the driving license, which will range from 6 months to 3 years and will depend on the circumstances of the case and the factual assessment by the adjudicating panel.

[147] See: Article 24 § 3 of the Misdemeanour Code and Article 8 of the Code of Proceedings in Misdemeanour Cases in conjunction with Article 95aa of the Code of Criminal Procedure.

[148] See: Article 24 § 1 and 1a of the Misdemeanour Code.

[149] This situation works both ways. There are cases where individuals with low incomes intentionally refuse to accept an on-the-spot fine, so the case is referred to a Norwegian court, which will then consider their low income and financial capacity when issuing a ruling. In such situations, the imposed fine is often lower than the one that would have been issued under the Regulations on the Imposition of Fines on-Site in Road Traffic Matters dated 29 June 1990.

[150] See: p. 2/5 of the statement from the Norwegian Police Directorate No. 22/2289 (22/219962-33) dated 21 December 2022.

a case must be mandatorily heard by a court, with a fine imposed that is proportionate to the offender's income and assets.[151]

The table below provides a comparative example of the fines that drivers face in Poland and Norway for similar traffic violations.

Table 25. Amount of on-the-spot fines

Selected traffic violations based on Norwegian nomenclature	Poland		Norway	
	PLN	NOK*	PLN*	NOK
Exceeding the speed limit by 5 km/h	50	137	418	1150
Exceeding the speed limit by 10 km/h	50	137	1146	3150
Exceeding the speed limit by 25 km/h where the limit is 60 km/h	300	825	2983	8200
Exceeding the speed limit by 35 km/h where the limit is 70 km/h	800/1600 #	2200/4400	5530	15200
Exceeding the speed limit by 55 km/h where the limit is 70 km/h	1500/3000 #	4123/8246	Fine imposed by court proportionally to offender's income	
Exceeding the speed limit by 70 km/h where the limit is 70 km/h	2500/5000 #	6872/13744	Fine imposed by court proportionally to offender's income	
Running a red light	2000	5498	3710	10200
Violating a "no entry" road sign (equivalent to Polish B-1)	up to 5000	up to 13744	2983	8200
Violating a "no entry" road sign (equivalent to Polish B-2)	up to 5000	up to 13744	2983	8200
Driving the wrong way on a one-way street	up to 500	up to 1374	2983	8200
Driving in a bus lane	100	275	2983	8200
Driving on a pedestrian pavement	up to 1500	up to 4123	2256	6200
Overtaking at an intersection	1000/2000 #	2749/5498	3710	10200
Driving without required lights during the day	100 (from dawn to dusk)	275	1418	3900
Failing to yield to pedestrians at a pedestrian crossing	1500/3000 #	4123/8246	3710	10200
Violating a "give way" or "stop" sign	300	825	3710	10200
Maximum fine	6000	16494	10022	27550[152]

[151] See: § 1(1) and § 4(3) of the Regulations on the Imposition of Fines on-Site in Road Traffic Matters dated 29 June 1990.
[152] There is a possibility of a higher fine in judicial proceedings, bypassing the simplified procedure outlined in the Norwegian regulations on on-the-spot fines in road traffic cases from 29 June 1990.

Selected traffic violations based on Norwegian nomenclature	Poland		Norway	
	PLN	NOK*	PLN*	NOK
Average monthly salary according to the Polish GUS / Norwegian *Statistisk sentralbyrå*[153]	7155	19670	20502	56360

*** Conversion based on the average exchange rate published by the National Bank of Poland on 26 July 2024, rounded to the nearest 1 PLN.**

 # Recidivism under Art. 38(2) of the Code of Offences (second offence for the same violation within two years).

Source: own elaboration based on: Norwegian Act on On-the-Spot Fines for Traffic Offenses of 29 June 1990 (publisher: ZA-2024-01-26-119), Regulation of the Council of Ministers of 24 November 2003 on the amount of fines imposed by on-the-spot fines for selected offences, and Code of Offences of 20 May 1971.

Of course, the financial consequences of violating road traffic regulations should be considered in the context of average incomes earned by individuals within each society. However, it is essential to bear in mind that purchasing power and the cost of living can vary significantly depending on the individual and their financial situation.

Regardless of these differences, one can reasonably conclude—based on an assumed income ratio of 35%—that the fines imposed through the simplified procedure of on-the-spot penalties in road traffic cases, as stipulated in the Norwegian regulations from 29 June 1990, are structurally comparable to those in Poland. This is particularly true for offences such as running a red light, violating traffic signs, disobeying no-entry signs, or overtaking restrictions. In some cases, Polish fines are even higher than those in the Norwegian system when considering their value relative to average incomes.

However, it is worth noting areas where Polish fines are proportionally lower, particularly in relation to **speeding**. Assuming a simple proportional calculation (x 0.35),[154] fines for speeding in Poland—if calculated according to Norwegian standards—would amount to PLN 150 (for exceeding the speed limit by 5 km/h), PLN 150 (for exceeding by 10 km/h), PLN 1,045 (for exceeding by 25 km/h), or PLN 1,935 (for exceeding by 35 km/h). The values of Polish speeding fines are similar to those in Norway (accounting for proportionality) in cases of repeat offences, as specified in Article 38(2) of the Code of Petty Offences (repeating the same offence within two years).

It can be concluded that the Norwegian system of fixed-rate fines for road traffic offences accepted on the spot is generally more stringent when it comes to speeding violations. This is significant, as speeding is the leading cause of road accidents, and excessive speed results in more severe consequences in traffic collisions.[155]

It is also essential to mention **the alternative penalty of imprisonment**. According to § 3 of the Norwegian regulations concerning on-the-spot fines in road traffic cases dated 29 June 1990, an alternative imprisonment sentence is set, where each 1,000 NOK of the fine corresponds to one

[153] Source: (1) https://www.ssb.no/ (2) Announcement of the President of the Central Statistical Office from 9 February 2024 regarding the average salary in the national economy in 2023.
[154] Assumption: The average income of a Polish citizen constitutes 35% of the average income of a Norwegian citizen.
[155] See.: p. 4/5 from the position of the Norwegian Police Directorate no. 22/2289 (22/219962-33) dated 21 December 2022.

day of imprisonment. This provision adds an extra layer of deterrence, emphasizing the gravity of non-compliance with road safety regulations in Norway.

4.7.3. Fines for offences detected by the ATC system and through simplified fines procedures. The inevitability of punishment.

In cases where fines are issued in the simplified procedure by the ATC centre (stationary speed cameras or section speed measurements), the driver receives a notice by mail, requiring them to identify the offender within 7 days and agree to the imposition of the fine under the simplified procedure for imposing fines on-site, as per the Norwegian Regulations on Issuing On-the-Spot Fines in Road Traffic Cases, dated 29 June 1990.

After confirming the fine under the simplified procedure, the offender is obliged to pay it. The payment request is delivered through the Norwegian National Collection Agency (*Statens innkrevingssentral*, SI).[156] In the event of non-payment within the deadline, SI is legally authorised to automatically enforce the collection of funds, including interest, through administrative execution[157] (garnishment of wages, healthcare contributions, bank accounts, savings, or seizure of movable or immovable assets). **If the fine cannot be recovered, it is automatically converted into imprisonment** (following the rule of 1000 NOK = 1 day of imprisonment) based on SI's application. If the offender fails to report to serve the imprisonment, they will be pursued by the police.

Speed measurement conducted via the ATC system differs from that conducted by handheld laser measurement devices. The process is fully automated, eliminating the possibility of human error in individual measurements, as confirmed by the Norwegian Supreme Court.[158]

The ATC (Automated Traffic Control) system in Norway issues approximately 100,000 fines annually for speeding violations.[159] The simplified procedure for on-the-spot traffic fines dated June 29, 1990, provides significant efficiency gains for the Police and Prosecution.[160] This same enforcement procedure also applies to other violations detected on-the-spot by the Police under the same regulations.

A key difference between the Norwegian and Polish systems is that, in Poland, if effective enforcement of a fine or court decision is not achieved within 3 years, the financial penalty or measure is not executed.[161] The same 3-year limitation applies in Norway.[162] However, Norway has an automatic conversion of financial penalties (fines) into imprisonment, ensuring that penalties are enforced, which does not exist in Poland.

Additionally, Norway has mechanisms not present in the Polish system, such as the **automatic increase of fines by 50% if not paid within three weeks, specifically for parking violations** (§ 31(a) of

[156] *Statens innkrevingssentral*, under the Norwegian Tax Administration, is responsible for the collection, enforcement, and accounting of fines imposed by the police. The legal basis for its operation is the Norwegian Act on the National Enforcement Agency (SI) of 11 January 2013 (publisher: ZA-2022-12-20-109).
[157] In accordance with Section 4, Subsection 1 of the Act on Enforcement of 26 June 1992 (publisher: ZA-2023-12-20-110).
[158] Supreme Court Judgment dated 15 January 2008 in case HR-2008-64A-Rt-2008-44.
[159] See: page 2/5 of the Norwegian Police Directorate's Position No. 22/2289 (22/219962-33) dated 21 December 2022.
[160] Instructions for *Utrykningspolitiet* No. GP4027.
[161] See: Article 45, Sections 1 and 3 of the Offences Code.
[162] See: Section 2 of the Norwegian Act on Limitation of Claims of 18 May 1979 (publisher: ZA-2020-12-18-146).

the Road Traffic Act dated June 18, 1965). Appeals against such fines do not halt the increase process.

In Norway, there is also a provision for a category of fines (§ 31, § 31(a), and § 36(a) of the Road Traffic Act dated June 18, 1965).[163] If these fines are not paid on time in accordance with § 38 of the same Act, they can be **secured by a registration lien on the vehicle**. This applies particularly in cases where the vehicle owner is also the driver.

The registration lien takes precedence over all other claims to the vehicle. As a result, the sale or transaction involving the vehicle is either impossible or significantly hindered until the debt is paid and the lien is removed.

4.7.4. Traffic offences – road traffic accidents

RTS is also influenced by the severity of penalties imposed for serious traffic offences. Essentially, each road traffic accident incurs a specific socio-economic cost. The objective of legislation in any country is to eliminate undesirable behaviours in road traffic and to provide a deterrent effect by specifying the penalties for committing traffic offences.

In Norway, these matters are generally regulated by Section 31 of the Road Traffic Act dated 18 June 1965, as well as Sections 280 and 281 of the Norwegian Penal Code. In the Polish legal system, these aspects are comprehensively covered by Article 177, Sections 1 and 2 of the Penal Code.

Polish legal regulations also differentiate, in relation to the victim of a road traffic accident, between "minor bodily harm" (1), "serious bodily harm" (2), and "death" (3). Norwegian regulations, on the other hand, only provide for two distinct categories: "bodily harm or injury" (1) and "death" (2).

Table 26. Classification of traffic accidents and legal consequences for the offender

	Poland	Norway
Causing a traffic accident resulting in: Poland: (1) "bodily harm" Norway: (1) "bodily harm or injury"	Penal risk: Imprisonment of up to 3 years (Article 177 § 1 of the Penal Code).	Penal risk: Imprisonment of up to 3 years (§ 280 of the Norwegian Penal Code in conjunction with § 31 of the Norwegian Road Traffic Act).
Causing a traffic accident resulting in: Poland: (2) "serious bodily harm" Norway: (1) "bodily harm or injury"	Penal risk: Imprisonment from 6 months to 8 years (Article 177 § 2 of the Penal Code).	Penal risk: Imprisonment of up to 3 years (§ 280 of the Norwegian Penal Code in conjunction with § 31 of the Norwegian Road Traffic Act).
Causing a traffic accident resulting in: Poland: (3) "death" Norway: (2) "death"	Penal risk: Imprisonment from 6 months to 8 years (Article 177 § 2 of the Penal Code).	Penal risk: Imprisonment of up to 6 years (§ 281 of the Norwegian Penal Code in conjunction with § 31 of the Norwegian Road Traffic Act).
Criminal measures (possible to be imposed by the court)	Possibility of imposing a driving ban for a period specified by the court (Article 42 § 1 of the Penal Code).	Imposition of a driving ban for a minimum of 1 year to 3 years (bodily harm) or at least 3 years up to indefinite (death). If this would be excessively harsh for the offender and there are special mitigating

[163] Fines for parking violations, driving under the influence of alcohol (0.2‰ – 0.5‰), and breaches of weight regulations for heavy vehicles (violations of weight and dimension regulations in road traffic).

	Poland	Norway
		circumstances, the driving ban period can be shortened (§ 33 of the Norwegian Road Traffic Act and § 2 Subsection 4 of the Norwegian regulations on the loss of driving rights).
Conditional discontinuance of criminal proceedings (treating the convicted person as not convicted for the probation period)	**Yes** – only in cases of the offence under Article 177 § 1 of the Penal Code (only: "bodily harm"). **Probation period:** 1 year – 3 years (Articles 66 and 67 of the Penal Code). **Condition:** prior non-criminal record.	**Yes –** in any case of the offence under § 280 and § 281 of the Norwegian Penal Code. **Probation period:** 2 – 5 years (§ 34 of the Norwegian Penal Code). **Condition:** may be applied even in cases of recidivism.

Source: own work, based on: Norwegian Penal Code dated 20 May 2005, Norwegian Road Traffic Act dated 18 June 1965, Polish Penal Code dated 6 June 1997, Norwegian regulations on the loss of driving rights dated 19 December 2003.

The above analysis indicates that **both systems for penalising serious traffic offences resulting in bodily harm or death are quite similar**. It is noteworthy that Norwegian regulations grant more power to the courts, which, within their discretionary powers, assess each factual situation and issue an appropriate verdict. Norwegian courts can also apply the mechanism of conditional discontinuance of criminal proceedings with probation periods, even in cases of recidivism, though these periods are generally longer than those in the Polish legal system. In contrast, Poland takes a more serious approach to traffic offences, distinguishing severe injuries that cause permanent bodily harm (health disorders, damage to body organs).[164]

4.7.5. Traffic offences – driving under the influence of alcohol

A separate analysis is required for the regulations concerning operating motor vehicles under the influence of alcohol. Both legal systems – Polish and Norwegian – treat these cases with particular seriousness. It is also important to consider the differences between "driving under the influence of alcohol" and "causing a traffic accident while under the influence of alcohol". In the latter case, the legal consequences differ.

In Norway, this type of traffic offence is referred to as *Promillekjøring* ("driving under the influence"). While causing a traffic accident by a sober person is generally treated as an unintentional act, driving under the influence of alcohol is often treated as a deliberate act by the offender.

[164] See: Article 157 § 1 of the Polish Penal Code in conjunction with Article 177 § 1 and 2 of the Polish Penal Code.

Table 27. Legal consequences for drivers under the influence and after consuming alcohol

	Poland	Norway
Driving after consuming alcohol (0.2‰ – 0.5‰)	Arrest or fine of PLN 2500 – 5000 (Article 87 § 1 of the Offences Code).	Fine as determined by the court (§ 31 of the Norwegian Road Traffic Act).
Driving ban	From 6 months to 3 years	None
Driving under the influence of alcohol (0.5‰ – 1.5‰) Poland (0.5‰ – 1.2‰) Norway	Imprisonment of up to 3 years (Article 178a § 1 of the Penal Code) (in cases of recidivism: from 3 months to 5 years).	• Fine as determined by the court, • Conditional or unconditional imprisonment for a period determined by the court (§ 31 of the Norwegian Road Traffic Act)
Driving ban	At least 3 years	At least 1 year (in cases of recidivism within 5 years of the first offence: lifetime driving ban).
Driving under the influence of alcohol (0.5‰ – 1.5‰) Poland (0.5‰ – 1.2‰) Norway	Imprisonment of up to 3 years (Article 178a § 1 of the Penal Code) (in cases of recidivism: from 3 months to 5 years).	• Fine as determined by the court, • Unconditional imprisonment for a period determined by the court (§ 31 of the Norwegian Road Traffic Act)
Driving ban	At least 3 years	At least 1 year (in cases of recidivism within 5 years of the first offence: lifetime driving ban).
Confiscation of vehicle	Confiscation of the vehicle or its equivalent value with the possibility for the court to waive the confiscation in particularly justified circumstances (Article 44b of the Penal Code in conjunction with Article 178a § 5 of the Penal Code).	None

Source: own elaboration based on: Norwegian Penal Code dated 20 May 2005, Norwegian Road Traffic Act dated 18 June 1965, Polish Penal Code dated 6 June 1997.

A separate issue is **the practical approach of Norwegian courts to applying criminal sanctions for driving under the influence**. As shown in the table above, the Norwegian judiciary has considerable flexibility in determining the extent of the penalty. The penal regulations allow some leeway for reducing or increasing the penalty compared to what is requested by the Police in the indictment (Norwegian: *tiltalebeslutning*) submitted to the court. Whether the court leans towards the upper or lower limit of the penalty range depends on mitigating or aggravating circumstances as well as the offender's attitude. The list of mitigating and aggravating circumstances is defined in §§ 77 and 78 of the Norwegian Penal Code.

The likely criminal sanctions for driving under the influence, based on established Norwegian case law, are summarised in the table below.

Table 28. Likely criminal sanctions for driving under the influence in Norway

Blood alcohol concentration (‰)	Driving ban period	Mandatory imprisonment	Fine
0.2‰ – 0.5‰	None	None	1.5 x average monthly net salary of the offender. Average Norwegian salary: 56,360 NOK. Fine for average Norwegian salary in NOK: **84,540 NOK.** Fine for average Norwegian salary in PLN: **30,753 PLN.**
0.5‰ – 0.7‰	12 – 18 months	2 weeks unconditional imprisonment or suspended imprisonment	1.5 x average monthly net salary of the offender. Average Norwegian salary: 56,360 NOK. Fine for average Norwegian salary in NOK: **84,540 NOK.** Fine for average Norwegian salary in PLN: **30,753 PLN.**
0.7‰ – 0.9‰	18 – 20 months	Up to 1 month unconditional imprisonment	1.5 x average monthly net salary of the offender. Average Norwegian salary: 56,360 NOK. Fine for average Norwegian salary in NOK: **84,540 NOK.** Fine for average Norwegian salary in PLN: **30,753 PLN.**
0.9‰ – 1.1‰	20 – 22 months	Up to 1 month unconditional imprisonment	1.5 x average monthly net salary of the offender. Average Norwegian salary: 56,360 NOK. Fine for average Norwegian salary in NOK: **84,540 NOK.** Fine for average Norwegian salary in PLN: **30,753 PLN.**
1.1 – 1.2‰	22 – 24 months	Up to 1 month unconditional imprisonment	1.5 x average monthly net salary of the offender. Average Norwegian salary: 56,360 NOK. Fine for average Norwegian salary in NOK: **84,540 NOK.** Fine for average Norwegian salary in PLN: **30,753 PLN.**
powyżej 1.2‰	Minimum 2 years	1 month unconditional imprisonment	1.5 x average monthly net salary of the offender. Average Norwegian salary: 56,360 NOK. Fine for average Norwegian salary in NOK: **84,540 NOK.** Fine for average Norwegian salary in PLN: **30,753 PLN.**

Source: own elaboration based on: data from *Statistisk sentralbyrå*, Norwegian Penal Code dated 20 May 2005, Norwegian Road Traffic Act dated 18 June 1965, regulations concerning the loss of driving rights dated 19 December 2003 (publisher: ZA-2023-10-18-1646).

The analysis indicates that in Norway, the penalties imposed by the court for driving after consuming alcohol include imprisonment, a fine, and a driving ban ranging from 1 to 2 years.

In many cases, it is not the imprisonment or the fine (although severe, high, and dependent on the offender's income)[165] that concerns drivers the most, but rather the suspension of their driving licence. The driving ban poses significant daily challenges for those who have previously depended on motorised transport. This is especially true in a country like Norway, where distances are

[165] See: Court of Appeal in Gulating's ruling of 12 September 2017 (LG-2017-35089) modifying the verdict of the District Court of Bergen (TBERG-2016-182213). Case details: A 71-year-old man was sentenced by the District Court to 30 days in prison and a fine of 550,000 NOK (over 200,000 PLN) for driving with a blood alcohol level of 1.46‰. The Court of Appeal found that the District Court had imposed an excessively high fine and, after reassessing the offender's overall financial conditions, ruled that the fine should be reduced to 300,000 NOK (over 109,000 PLN).

considerable and population density is low. The range of challenges associated with a driving ban is broad—from disrupting daily routines related to family and professional matters to serious consequences for employment or running a business.

4.7.6. Road traffic offences – causing a road traffic accident under the influence of alcohol

The most severe form of road traffic offence is causing a road traffic accident under the influence of alcohol, resulting in injury or death to other people. Polish law treats such incidents much more restrictively, whereas Norwegian law does not specifically address these situations in detail.

Norwegian law does not have a qualified form of road traffic offence that specifically sanctions a road traffic accident caused by a driver under the influence of alcohol. In such cases, Norwegian courts must cumulatively consider sanctions related to causing a road traffic accident with fatal consequences or injury to the victim, along with the driver's state of intoxication. According to Norwegian court rulings, **causing an accident under the influence of alcohol is considered an aggravating factor for the perpetrator and indicates the intentionality of the criminal act**.

Table 29. Legal consequences for drivers causing a road traffic accident under the influence of alcohol (blood alcohol concentration above 0.5‰)

	Poland	Norway
Injury to victim	Threat of imprisonment up to 6 years (Article 178 § 1 of the Penal Code).	Threat of imprisonment up to 3 years (§ 280 of the Norwegian Penal Code in conjunction with § 31 of the Norwegian Road Traffic Act).
Serious injury to victim	Threat of imprisonment from 3 to 16 years (Article 178 § 1a of the Penal Code).	Threat of imprisonment up to 3 years (§ 280 of the Norwegian Penal Code in conjunction with § 31 of the Norwegian Road Traffic Act).
Death of victim	Threat of imprisonment from 5 to 20 years (Article 178 § 1a of the Penal Code).	Threat of imprisonment up to 6 years (§ 281 of the Norwegian Penal Code in conjunction with § 31 of the Norwegian Road Traffic Act).
Additional sanctions	Vehicle confiscation **optional** for blood alcohol concentration below 1‰ (Article 178 § 3 of the Penal Code).	Fine determined by the court (§ 31 of the Norwegian Road Traffic Act).
	Vehicle confiscation **mandatory** for blood alcohol concentration above 1‰ (Article 178 § 3 of the Penal Code).	
Driving ban	At least 3 years (for repeat offenders – lifetime ban).	At least 1 year (for repeat offenders within 5 years from the first offence – lifetime ban).

Source: own elaboration based on the Norwegian Penal Code of 20 May 2005, the Norwegian Road Traffic Act of 18 June 1965.

It is worth noting that in cases involving drivers under the influence of alcohol who have caused a serious road traffic accident in Poland, temporary detention is often applied under Articles 250 and 251 of the Code of Criminal Procedure (for a period of 3 months with the possibility of extension). Temporary detention is generally used if the actual imprisonment penalty for the alleged crime is 3 years. In contrast, in the Norwegian legal system, temporary detention can be applied when the anticipated imprisonment penalty is 6 months (§ 171 of the Criminal Procedure Act of 22 May

1981).[166] The grounds for applying temporary detention in both the Polish and Norwegian systems are similar—there is a real risk of flight, a real risk of evading the sentence, preventing further commission of the crime, or influencing witness testimony.

4.7.7. Judicial practice in road traffic accident cases

An additional issue is the comparison of Norwegian judicial practice with Polish judicial practice. It should be noted that such a comparison (available in the annexes – Annex 5) can only be made at a **high level of generality**, as each road traffic accident case is treated individually, the personal circumstances of the perpetrator vary, and the adjudicating panels in both countries are guided by different legal and extra-legal considerations when imposing specific criminal sentences.

The analysis clearly indicates that **Norwegian courts tend to impose higher fines and financial penalties than Polish courts**. At the same time, Polish courts impose significantly higher imprisonment penalties in cases of road traffic accidents caused under the influence of alcohol, accidents resulting in severe injuries, and fatalities in road traffic accidents. Norwegian counterparts are distinctly focused on prevention and the possibility of "giving a second chance" to those convicted of causing a road traffic accident (rehabilitation, continued social integration, shorter imprisonment sentences), and they more frequently resort to lifetime driving bans. In contrast, Polish courts often impose driving bans but with specific time limits (not lifetime bans).

Polish courts are somewhat more lenient towards perpetrators of unintentional road traffic accidents where the injuries to victims are not extensive. In the case of drivers under the influence of alcohol (without causing a road traffic accident; Norwegian *Promillekjøring* – "driving under the influence"), the penalties imposed are similar.

It should be noted, however, that in Poland, significant changes to the Penal Code and the Code of Offences were made in 2023–2024, which will substantially tighten the penalties for drivers under the influence of alcohol and for those who cause road traffic accidents under the influence of alcohol (these changes are already reflected in the previously provided tables). However, it is difficult at this stage to assess how Polish criminal courts will shape their jurisprudence on this matter, as any evaluation in this regard requires at least three years of functioning under the new legal regulations.

[166] Act on Criminal Procedure of 22 May 1981 (publisher: ZA-2024-05-31-25).

5

Functioning of RTS system in Norway and Poland

5..FUNCTIONING OF RTS SYSTEM IN NORWAY AND POLAND

5.1. General aspects

The primary goal of the **Road Traffic Safety (RTS) system** is to protect the lives and health of road users. This system should facilitate safe travel, minimize the occurrence of dangerous events and their consequences, and promote a safety-conscious mindset. **The RTS system** can be defined as a **collection of social, material, and immaterial elements and their interrelationships**. These include: road users and organizers, infrastructure, vehicles, and other components directly related to the space, as well as organizational structures, competencies, policies, procedures, methods and standards, reporting, communication (information and promotion), and most importantly, actions aimed at ensuring safety. **At the national level**, the RTS system consists of four subsystems: the national institutional subsystem, functional systems (e.g., education, justice, emergency services), preventive and response systems to potential or actual damage, and the Road Traffic Safety Management System (RTSMS).

RTS management is distributed among various bodies and institutions at the international, national, regional, and local levels. Thus, the role of the **RTS leader** is crucial, tasked with directing and coordinating efforts in the analysed area for the benefit of RTS. **Important elements of the RTSMS** also include influencing tools such as: RTS programs and plans, stimulative measures, and control tools. To correctly formulate objectives, it is necessary to use effective forecasting tools for safety measures and assess the effectiveness of proposed strategic actions. Key elements also include: the right set of partners implementing objectives, sources of funding, as well as databases and knowledge, expert systems, RTS information systems, guidelines, best practice examples, and scientific research.

The main factors contributing to road accidents are **road users, vehicles, and infrastructure**. The complex nature of accident occurrence means that effective preventive measures should be conducted in a holistic, coordinated, and organized manner, involving a coherent team of methods and appropriate technical and organizational measures. This is precisely what a well-functioning **RTS system** should aim to achieve.

The structure and scope of **RTS programs** have been shaped by the experiences of OECD countries,[167] including Sweden, the Netherlands, the United Kingdom, and the World Bank.[168] According to these recommendations, a well-prepared RTS program should include the following elements: analysis of safety status, analysis of external and internal conditions, ambitious vision for RTS, strategic and intermediate goals, priority areas of action, directions of action and specific objectives, action plans, funding principles, and monitoring principles.

[167] OECD/ITF. *Towards Zero: Ambitious Road Safety Targets and the Safe System Approach*. Paris, 2008.
[168] Bliss, T., & Breen, J. *Country Guidelines for the Conduct of Road Safety Management Capacity Reviews and Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects*. Washington, 2009. World Bank Global Road Safety Facility.

5.2. Road safety programs as a tool for RTS

5.2.1. Polish National Road Safety Program

Road safety in Poland is addressed in various documents and legal acts. However, a comprehensive description of efforts to improve road safety is provided by the strategic national document – **the National Road Safety Program 2021-2030** (Polish: *Narodowy Program Bezpieczeństwa Ruchu Drogowego 2021-2030,* NPBRD). It was prepared by the National RTS Council, in accordance with Article 140c of the Road Traffic Act, which grants it the authority to *"develop road safety improvement programs based on proposals from relevant ministers and evaluate their implementation."* The previous edition of this document covered the years 2013–2020. Before 2013, the National Road Safety Program for the years 2005–2007–2013, GAMBIT 2005, was in force, which was adopted by the Polish Council of Ministers in April 2005. It was established a year after Poland's accession to the European Union and confirmed its commitment to achieving the EU goal of halving the number of road traffic fatalities over 10 years.

The current NPBRD sets the **main objectives for improving road safety by 2030**:

- Reducing the number of road traffic fatalities by 50% in Poland, i.e., to no more than 1,455.
- Reducing the number of seriously injured road traffic victims by 50% in Poland, i.e., to no more than 5,317 by 2030.

The document also sets intermediate goals for specific years. The NPBRD follows the **Vision Zero** approach, aiming for no serious injuries and fatalities from road accidents in the long term. The strategy explicitly states that the goals set are only a stage on the path to completely eliminating serious injuries from road accidents on Polish roads.

A detailed analysis of the NPBRD and its comparison with the Norwegian counterpart is provided later in this document.

The set of tasks intended to achieve the strategic priorities of the NPBRD is outlined in the **Implementation Program**, covering a period of one or two years. The program also assumes that its implementation is supported by actions planned in other strategic road safety documents, developed by entities such as the General Directorate for National Roads and Motorways, the National Police Headquarters, the National Fire Brigade Headquarters, the General Inspectorate of Road Transport, and the Military Police. The importance of provincial programs, created by **Provincial RTS Councils** (operating under the Marshals of individual voivodeships) according to Article 140h of the Road Traffic Act, as well as other **local programs** (county, municipal) is also significant.

5.2.2. Norwegian national road safety plan

In Norway, the main strategic document for road safety is the **National Plan of Action for Road Safety 2022-2025** (*Nasjonal tiltaksplan for trafikksikkerhet på vei 2022–2025*). This is the sixth edition of the strategy, each of which has covered a four-year period. It was developed jointly by the Norwegian

Road Administration (SV), the Police, the Norwegian Directorate of Health, the Norwegian Directorate for Education and Training, *Trygg Trafikk*, and municipal and county authorities.

The provisions of this document directly refer to the **Norwegian National Transport Plan 2022-2033** (*Nasjonal Transportplan*), which among the initiatives for an efficient, environmentally friendly, and safe transport system, aims to achieve Vision Zero (Norwegian: *Nullvisjonen*) by 2050 concerning fatalities and serious injuries in road traffic. In road transport, the Norwegian National Transport Plan aims to reduce this number to a maximum of 350 by 2030, with no more than 50 being fatalities.

The National Plan of Action for Road Safety 2022-2025 is based on **three pillars** that support the pursuit of Vision Zero: **ethics** (no acceptance of road traffic fatalities), **science** (scientific basis for road design), and **responsibility** (safety is a shared responsibility of road users, authorities, and other stakeholders). The document also identifies **15 priority areas**. These were chosen either for their high potential to reduce fatalities and serious injuries through the implementation of actions within their scope or because they are significant in overall preventive measures. The areas are grouped according to: risky behaviours in road traffic, population groups, road user categories or vehicle types, road safety, and other conditions.

Within these areas, the document plans **179 specific RTS actions**. The plan designates responsible entities for their implementation (SV, *Trygg Trafikk*, Police, Norwegian Directorate of Health, municipal and county authorities, etc.), indicators for their achievement, and timeframes.

A detailed analysis of the Norwegian national RTS program and its comparison with the Polish counterpart is provided later in the document.

5.2.3. Norwegian regional and local RTS programs

In addition to the national program, Norway also has **road safety programs at the county and municipal levels**. One of their fundamental elements is stimulating local activity and increasing public awareness of road traffic hazards. These documents must, of course, align with the national road safety program and other municipal strategies depending on their content (e.g., related to development vision, infrastructure, mobility, education, etc.). Similar to the national road safety plan, county and municipal plans diagnose the main road safety issues in a given local government area, then outline the planned actions, specify their indicators, and set goals to be achieved. County and municipal road safety strategies are developed by the relevant RTS Councils or, in municipalities, ad hoc local project teams, in collaboration with other stakeholders (police, residents, social organizations, etc.), and then adopted by the representative bodies of the local governments (county council or municipal council).

The primary goal of road safety activities in Norway at levels lower than the national level is **to achieve the national objective** of reducing fatalities and injuries in road traffic by actively working on road safety within local government areas. Following administrative reforms from 2020-2024, the responsibility of managing various categories of roads has increased, and regional and municipal road safety plans have been resumed. Thus, the county administration is directly responsible for road safety on county roads. County authorities play a significant role in road safety

as intermediaries between the state and municipalities. They primarily rely on the road safety council's activities at the county level and county road safety plans.

Additionally, the county municipality influences road safety through its responsibility for planning, operating, and maintaining the county road network. The main tool in this context is the management systems for the county road network and action plans prioritizing the council's tasks in this area. Furthermore, accident analyses can be conducted, maps created, and measures identified to improve RTS on the analysed road sections.

In 2023, an evaluation of the implementation of RTS management systems in the new counties was conducted.[169] The basic factors affecting the functioning of these systems were identified as: safety culture, safety systems, and reorganization. The results of the evaluation showed significant variation in the level of implementation of RTS management systems by county councils. It was also noted that systematic work by public authorities in counties and municipalities on continuously improving road safety is associated with positive outcomes in this area (reduction in fatal accidents) at the national level.

County road safety plans systematically include efforts to reduce risks for specific groups. An important task is to set priorities for groups and actions with the greatest effect in a context of limited resources.

In 2006, an evaluation of Norwegian municipal RTS programs[170] found that about 91% of municipalities (out of 434) had road safety programs. This followed the establishment of a requirement to have such a program when applying for funding for activities. In 1998, *Statens vegvesen*, in collaboration with *Trygg Trafikk*, developed a guide for municipalities on preparing road safety plans, which was updated in 2014 (Handbook 722).[171]

The general structure of road safety programs consists of four elements:

- **A vision**, which is mostly Vision Zero and refers to national and regional transport plans and road safety plan.
- **A main goal**, which is a numerical target for reducing the number of fatalities and seriously injured or a general formulation of goals based on the variability of road accidents.
- **Sub-goals**, which cover all central areas within local road safety work (priority treatment of pedestrian and bicycle traffic, safer school roads, improved conditions in residential areas and city centres).
- **Measures to achieve the goals**, identified based on accident characteristics and analysis.

Norwegian municipalities are also responsible for other actions related to municipal roads: spatial planning, road safety education in preschools and primary schools, and information for road users.

[169] Nævestad, T.O., Elvik, R., et al. *Systems for Traffic Safety Management, Safety Culture, and Facilitative Behavior: Status of Four Norwegian Counties in 2023*. TØI, Oslo 2024.
[170] Rydningen, U., Salbu, D. *Evaluation of Local Traffic Safety Plans*, in: *WIT Transactions on the Built Environment*, 2019.
[171] *Kommunale trafikksikkerhetsplaner Nr. V722*, Statens vegvesens håndbokserie, 2014.

5.2.4. Polish regional and local RTS programs

In Poland, road traffic safety (RTS) tasks can be carried out at the voivodeship, county, and local levels.

At the voivodeship level, RTS tasks are carried out through: the Voivodeship RTS Council, voivodeship RTS programs, and institutions and organizations located within the voivodeship within their competencies. **The Voivodeship RTS Council** operates under the voivode as the voivodeship coordination team for RTS, coordinating and defining the directions for public administration actions in this area. The Voivodeship RTS Council is responsible for:

- Developing regional RTS improvement programs.
- Reviewing drafts of local laws related to RTS.
- Approving the expenditure plan of voivodeship road traffic centres allocated for RTS improvement.
- Initiating the training of public administration staff and RTS training.
- Initiating inter-voivodeship cooperation.
- Collaborating with relevant social organizations and non-governmental institutions.
- Initiating educational and informational activities.
- Analysing and evaluating undertaken actions.

The first **voivodeship RTS programs** in Poland were developed between 1995 and 1996, alongside the initiation of systemic RTS actions at the national level. Experiences from these programs were used in the development of the National RTS Program GAMBIT 2005–2007–2013, which recommended regional and local RTS programs. These programs were designed based on the layout recommended by OECD experts, similar to the national program, and consisted of five main elements:

- Diagnosis of the RTS system and status in the region.
- External and internal conditions (international and national requirements and programs).
- Long-term programs (including: vision, strategic goals, intervention areas, and priority action directions – usually for a period of 10 years, in line with the national program goals).
- Short-term programs (1–3 years, including: priority actions, tasks, implementers, and sources of funding).
- Implementation and monitoring principles.

Programs are approved by the Voivodeship RTS Councils and directed for implementation to the entities that are their members. A drawback of this approach is the lack of actual leading institutions responsible in practice for the implementation of voivodeship RTS programs, as well as dedicated funding sources, resulting in many planned actions and tasks not being carried out.

The NPBRD introduces actions related to the Road Traffic Safety Management System (RTSMS) in regions to improve the effectiveness of Voivodeship RTS Councils and to determine funding for them. This is significant because the experiences from the successive years of implementing RTS programs highlight the important role of regional programs in improving RTS. The NPBRD stipulates that regional RTS programs should align with the national program while also considering the conditions

set by relevant development strategies or regional operational programs. The NPBRD aims to develop mechanisms for funding regional systemic actions by Voivodeship RTS Council Secretariats, including monitoring the state of RTS, staff training, and a coherent communication policy.

The first **county and local RTS programs** in Poland were developed in 2005–2006 as a result of implementing the recommendations of the National Road Safety Program GAMBIT 2005–2007–2013. These programs had a structure similar to regional programs and included:

- **Diagnosis of RTS** prepared for the period since the establishment of the counties, i.e., since 1999.
- **Conditions:** international, national, regional, and local.
- **Vision:** similar to the national and regional programs, the Vision Zero was adopted.
- **Goals:** strategic goals were adopted in a similar scope as in regional programs, aiming to reduce the number of fatalities by 50% over 10 years; in cases of a low number of fatalities, the number of fatalities and seriously injured were summed.
- **Milestones** (intermediate goals) were set for subsequent 2–3 year periods.
- **Specific goals and priorities:** the strategic program provided for the achievement of five specific goals along with 2–4 priorities (examples of goals include: creating the basis for effective and long-term RTS actions, protecting pedestrians, children, and cyclists, shaping safe behaviour among road users, building and maintaining safe road infrastructure, reducing the severity and consequences of road accidents, etc.).

In the systematics of implementing county programs, **five levels of activity** are distinguished, ranging from general issues to specific details. These are: specific goal, priority, action, task, and project.

Unfortunately, the implementation of RTS programs at the county and local levels did not succeed, and many of the intended actions were not realized. County RTS Inspectors were not appointed. The mandatory preparation and implementation of county RTS programs were not introduced. A system for financing and supporting RTS actions was not developed. As a result, in most cases, the continuation of county and local RTS program preparation and systematic RTS activities in counties, cities, and municipalities was abandoned. However, it should be noted that RTS actions are carried out on an ad-hoc basis without a systematic approach at the local level. Therefore, the NPBRD recommends supporting systemic solutions at the local level by identifying effective intervention models, financing mechanisms, and benefits of comprehensive preventive measures.

A synthetic comparison of RTS programs in Norway and Poland, including actions related to national RTS programs, local programs, and police activities, is presented in the table below.

Table 30. Synthetic comparison of national RTS programs in Norway and Poland

Group	Parameter	Poland	Norway
General characteristics	Road Length (thousand km), total/paved/motorways and expressways	420.0/274.0/4.9	95.1/72.0/0.66
	Number of Fatalities F (worst year)	7901 (1991 r.)	560 (1968 r.)
	Number of Fatalities F (2023)	1896	118
	Fatality Rate RFR (fatalities/1 million inhabitants, 2023)	50.4	21.8
RTS program planning	Early systematic actions on RTS	Systematic actions began in 1996–2000, preparing two national RTS programs, GAMBIT 1996 and GAMBIT 2000. However, implementation was limited. It was only Poland's accession to the EU and the new national RTS program GAMBIT 2005 that accelerated the reduction of fatalities. This program adopted Vision Zero as the core idea, set a quantitative goal to reduce fatalities by 50% within a decade, identified areas, priorities, and strategic directions, established milestones, and developed and implemented short-term action plans with assigned tasks and recommended the development of sectoral, regional, and local RTS programs. These actions contributed to a 70% reduction in fatalities over 21 years, at an average rate of 4.8% annually.	Systematic actions began in 2000–2001, adopting Vision Zero with unanimous political support. Vision and goals were included in strategic transport plans, initiating a cycle of four-year national RTS programs. After adopting Vision Zero, RTS policy became more research-based, with measurable goals, detailed planning, and institutional frameworks for consensus on setting and funding goals. These actions contributed to a 65% reduction in fatalities over 22 years, with an increased reduction rate from 2.1% to 6.1% annually.
	RTS in transport plans	The Transport Development Strategy until 2030 (SRT2030) was adopted by the Council of Ministers in 2019. The main goal of the national transport policy in the strategy is to increase the country's transport accessibility and improve road safety and sector efficiency by creating a coherent, sustainable, innovative, and user-friendly transport system at the national, European, and global levels. The 4th intervention direction (improving road safety	The four-year National RTS Program 2022–2025 details the long-term National Transport Plan 2022–2033, which is also updated every four years and includes Vision Zero principles, basic strategic goals, and strategic directions for RTS actions.

Group	Parameter	Poland	Norway
		and transported goods) includes safety characteristics of different transport types from 2016–2018. However, it does not specify a long-term vision or set numerical strategic goals for transport safety by 2030.	
	RTS programs	The National RTS Program for 2021–2030 is the fifth subsequent RTS program for Poland, containing the vision, program goals, pillars, and priority directions for actions.	The National RTS Program for 2022–2025 represents the first stage of implementing the National Transport Plan and includes: conditions, vision, goals, areas, and priority directions for actions. It is the sixth subsequent Norwegian program since the initiation of systematic actions in RTS.
`	Conditions	The program considers the current state of road safety risks in Poland, as well as conditions arising from global (UN – Second Decade of Action for Road Safety) and European road safety policies (EU – EU Road Safety Policy Framework 2021–2030 – Next Steps Towards Vision Zero).	Norway is one of the safest countries in Europe and the world. The main challenges include: driving at unsafe speeds and head-on collisions on national roads, vehicles running off the road on county roads, and accidents involving pedestrians and cyclists in cities.
	Vision	The program's fundamental assumptions include: a long-term Vision Zero, a Safe System as a modern approach to road safety, and a comprehensive approach to road safety management.	Vision Zero has been the basis for road safety improvement efforts in Norway for 20 years.
	Goals	The main goal of the NPBRD is to reduce the number of fatalities and serious injuries by 50% within a decade. By 2030, the number of fatalities on Polish roads should not exceed 1455, and the number of seriously injured should not be more than 5317.	Global: Achieve the targets of 3.6 and 11.2 of the 2030 Agenda. Long-term: Zero fatalities and serious injuries by 2050. Strategic: No more than 350 fatalities and serious injuries by 2030. Detailed: Specific numerical indicators to be achieved by 2025.
	Priority areas for action	Following UN recommendations, five pillars have been adopted for road safety improvement by 2030: • **Pillar I –** Road Safety Management, • **Pillar II** – Safe Road Users • **Pillar III** – Safe Roads • **Pillar IV** – Safe Vehicles	Five priority areas and 15 directions for action have been adopted, targeting the main issues in Norway and specifying 179 actions. These areas are attempted to be aligned with the pillars proposed in the UN Decade.

Group	Parameter	Poland	Norway
		• **Pillar V** – Emergency Response and Post-Crash Care. The pillar for Safe Speed is missing, with related actions included in Pillars II and III.	
	Safe road user	Based on the diagnosis of road safety in Poland and functional and organizational solutions outlined in national and foreign documents, the Safe Road User pillar identifies two priorities: • **Priority 1** – Shaping safe road user behaviours • **Priority 2** – Protecting road users. To achieve these priorities, 10 priority action directions are established in engineering, supervision, and education, supported by legislative actions and knowledge transfer..	The "Unsafe Road User Behaviours" area includes four priority action directions: speed, substances and intoxicants, seat belts and proper child restraints, and inattentiveness and distraction. There are 36 actions planned, including 9 dedicated to the Police. The "Road Users" area includes three priority action directions: children (0–14 years), youth and young drivers, and older road users. There are 36 actions planned, including one dedicated to the Police. The "Road Users" area includes three priority action directions: pedestrians and cyclists, motorcycles and mopeds, and road freight transport. 37 actions are proposed for these issues.
	Safe speed	There is no direct equivalent. Actions are included under the Safe Road User and Safe Roads pillars.	7 actions are planned in the "Unsafe Road User Behaviours" area, focused on enforcing compliance with speed limits.
	Safe road	Based on the diagnosis of road safety in Poland and the functional and organizational solutions outlined in national and foreign documents, the Safe Road pillar identifies three priorities: • **Priority 1** – Reducing the severity of road accidents • **Priority 2** – Developing modern road safety management systems • **Priority 3** (listed only in the action table) – Improving speed management systems. To achieve these priorities, 17 priority action directions are established in engineering, supervision, and education, supported by legislative actions and knowledge transfer.	The "Safe Roads" area includes two priorities: reducing head-on collisions on national roads and vehicles running off the road on county roads, and standards for maintenance and repairs. 18 actions are proposed for these issues.
	Safe vehicle	Based on the diagnosis of functional and organizational solutions in national and foreign documents, as well as the latest trends	There is no direct equivalent.

Group	Parameter	Poland	Norway
		and technological solutions in vehicle safety, the Safe Vehicle pillar identifies two priorities: • **Priority 1 –** Enhancing the safety level of all vehicles • **Priority 2** – Improving vehicle technical condition control. To achieve these priorities, 9 priority action directions are established in engineering, supervision, and education, supported by legislative actions and knowledge transfer.	
	Post-crash rescue and care	Based on the diagnosis of functional and organizational solutions outlined in national and foreign documents, as well as the latest trends and technological solutions in rescue and assistance for accident victims, the post-crash rescue and care pillar identifies two priorities: • **Priority 1** – Integration and development of the National Rescue System • **Priority 2** – Unified system for assisting road accident victims. To achieve these priorities, 11 priority action directions are established in engineering, supervision, and education, supported by legislative actions and knowledge transfer.	There is no direct equivalent.
	Road safety management system	Implementing a road safety management system based on the best and most effective solutions is the objective of the first pillar. The initial focus is on improving institutional management functions, including: coordination, legislative solutions, financing mechanisms, comprehensive promotion, monitoring tools and intervention effectiveness, transfer of the latest scientific knowledge regarding road traffic accidents and the most effective methods for mitigating their consequences. Seven key intervention areas are emphasized, focusing on: optimizing the functioning of organizational structures, legal regulations, establishing financing mechanisms, data collection and analysis	There is no direct equivalent.

Group	Parameter	Poland	Norway
		systems, research and knowledge transfer systems, enhancing communication actions related to road safety.	
	Other areas	None	The "New Technologies and Knowledge Base" area includes three priority action directions: utilizing new technologies in road safety work, systematic work on road safety in private and public enterprises, and increasing access to knowledge bases. A total of 37 actions are proposed for these issues. The "Other Actions" area includes six additional sets of actions (15 actions), covering: penalties and driving licenses, injury treatment, road users from immigrant backgrounds, roadworks, vehicle collisions with animals, quad bikes, and safety in tunnels.
	Implementation principles	Improving organizational structures, ensuring stable funding, coordinating and engaging government and non-governmental institutions and organizations, as well as continuous monitoring of actions and consistent communication are essential for achieving the goals of the National Road Safety Program 2030 (NPBRD 2030). Achieving the goals outlined in the National Road Safety Program 2021–2030 requires systematic implementation of proposed actions, effective program management, ongoing assessment of progress, and measurable outcomes of implementation. The managing entity for the program should be a leading unit (leader), which, during the transitional period, may be the Secretariat of the National RTS Council.	The program was developed and adopted by the SV, the Police, *Trygg Trafikk*, the Directorate of Health, the Directorate of Education, the Association of Municipalities, as well as representatives of major cities and counties in Norway. These entities will carry out the assigned tasks (some obligatorily, others voluntarily). Annual monitoring of progress in the implementation of the program is planned.
	Implementation programs	The main tool for implementing the National Road Safety Program 2021–2030 (NPBRD 2030) is the Implementation Programs (Polish: *Programy Realizacyjne*, PR). The Implementation Program for the period 2022–2023 has been completed, and the PR for 2024–2025 is currently underway. This document serves as a two-year action plan, developed with consideration of all pillars and focused on the priorities set for the period. The plan identifies theinstitutions/entities responsible for implementation,	There is no direct equivalent.

Group	Parameter	Poland	Norway
		the timeframe, and a set of indicators to measure the progress of the tasks.	
	Recommendations for future programs	Analysis of the effectiveness of the basic actions outlined in the NPBRD 2030 indicates that long-term goals can be achieved provided that the rate of reduction in the number of fatalities is maintained at 6%, and the number of seriously injured is reduced by 8% per year.	There is no direct equivalent.
Regional and local RTS programs	Types of programs	Road safety programs are primarily developed at the national level. At the regional (voivodeship) and local (county, municipality) levels, it is recommended to prepare road safety programs without obligatory measures or incentive systems.	Road safety work is primarily organized at three levels: national (Ministry of Transport, SV), regional, and municipal. Additionally, various interest organizations and public bodies make significant efforts at all three levels. The Norwegian safety management system includes: safety policies, role distribution, tasks and responsibilities, reporting systems, risk assessment methods, safety training, safety procedures, and monitoring indicators, considering the road network life cycle.
	Regional programs	Developing voivodeship RTS programs is the responsibility of the Voivodeship RTS Council. Like national programs, regional programs have a similar structure, including: diagnosis, conditions, vision and objectives, pillars (areas) and priority actions, implementation programs, and implementation principles.	The main goal at the county level is to contribute to the national goal of reducing road traffic fatalities and injuries through active work on road safety in the county area. County RTS plans systematically address risk reduction for specific high-risk groups. Prioritizing groups and actions with the most significant impact in the context of limited resources is crucial. Institutional changes resulting from regional reforms and the dissolution of joint road administration have increased the need for collaboration and communication between counties.
	Local programs	County-level RTS programs are undertaken sporadically by County RTS Councils (if they exist) or by local authorities. These programs have a structure similar to regional programs and include: diagnosis, conditions, vision and goals, milestones, directions of action, and tasks.	According to the Public Health Act and the Planning and Building Act, municipalities are generally responsible for local road traffic accident prevention and their consequences. Municipalities are responsible for the development, operation, and maintenance of the municipal road network. Since 2001, municipalities seeking government or regional funding (under the 50:50 program) must present a RTS plan.

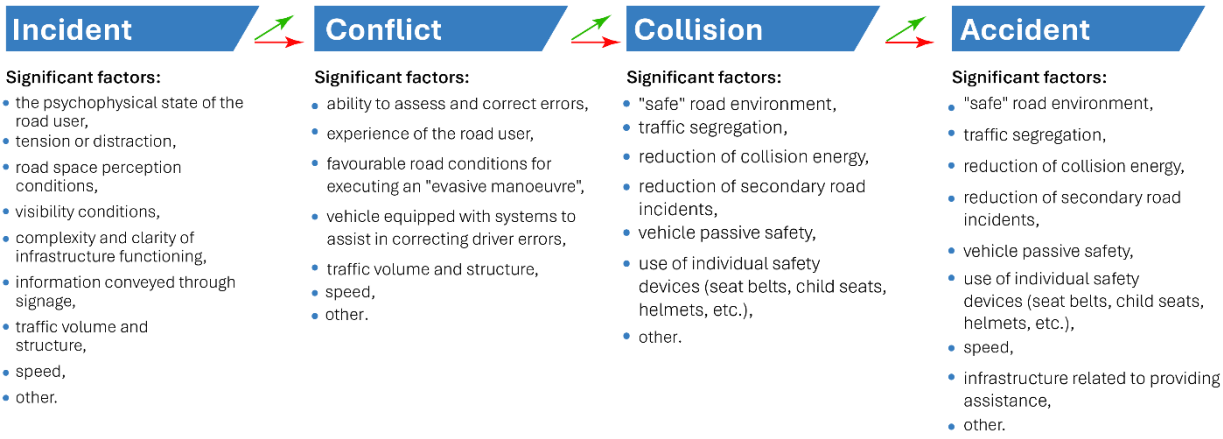
Group	Parameter	Poland	Norway
			The general structure of road safety plans consists of four elements: vision, main goal, sub-goals, and means to achieve the goals. There are three groups of actions: • Non-physical road safety measures under the "Safe Municipality in Road Traffic" program. • Physical safety measures on municipal roads. • Physical safety measures on county roads (co-financed by the municipality).
Actions assigned to the Police	-	The NPRD 2030 outlines 9 directions of action dedicated to the Police.	The National RTS Program includes 12 actions dedicated to the Police.

Source: own elaboration based on: National Road Safety Program 2021–2030, *Nasjonal tiltaksplan for trafikksikkerhet på vei 2022–2025*.

5.3. Application of technical and infrastructure measures to improve RTS

The range of technical and infrastructure measures used to improve RTS is directly linked to identified safety threats and the interactions observed between various circumstances of road incidents. Considering these interactions as a crucial factor in selecting measures for improving RTS reflects contemporary research indicating a more complex process in the development of road incidents compared to the understanding in Poland during the 1990s. The recent shift in approach to analysing road incidents and their circumstances is well illustrated by the diagram below.

Diagram 5. The sequence of events leading to road traffic accidents



Source: own elaboration.

In each phase of the event sequence, the role of various factors is crucial as they can interrupt the sequence and return the situation to normal traffic conditions or mitigate the effects of initiated incidents. These are mainly factors that facilitate correct decision-making by road users and the execution of those decisions. The list of factors provided in the diagram above is not exhaustive but effectively illustrates the complexity of their impact on road safety.

The primary goal of various road safety improvement measures is to create a road environment where the likelihood of errors by road users (occurrence of incidents) is minimized. In the event of such an error, the measures should provide opportunities to correct it or mitigate its consequences, especially if a corrective manoeuvre fails. Given this perspective, it is clear that **these measures must be implemented comprehensively**. This does not preclude the validity of applying individual measures, provided they address gaps in the effective and safe functioning of the broader road environment.

The observations above clearly indicate **that categorizing road safety improvement measures into technical, infrastructural, educational, and other groups should be considered conventional**. This is because their impacts on road safety, assessed by various metrics, are usually interconnected. This interconnection can either enhance or weaken the effectiveness of combined measures. Therefore, planning these measures should be comprehensive and organizationally coordinated, for example, within national and local road safety improvement programs. However, as the implementation of

specific groups of measures typically falls under the jurisdiction of different authorities, a formal division is applied.

This subsection provides a summary of the basic information on **technical measures and those directly related to road infrastructure** included in road safety improvement programs in Poland and Norway. These can generally be categorized as follows:

- Measures related to the expansion and reconstruction of the road network.
- Technical safety measures for roads.
- Technical measures for traffic supervision and management.
- Technical measures for data collection and processing.
- Emergency communication and rescue equipment.
- Vehicle equipment.

The above-mentioned categories of road safety improvement measures cover a broad range of specific solutions tailored to particular locations or sections of roads based on identified risks. Some traffic safety hazards are characteristic of an entire network or a large part of it, and therefore, the road safety improvement programs recommend solutions from various groups of measures for widespread application. The road safety improvement programs in Poland and Norway recommend similar measures, but differences can be observed, reflecting the varying levels of development and equipment in the road networks of the compared countries. The table below summarizes the recommended solutions for different groups of road safety improvement measures, prepared based on:

- *Nasjonal tiltaksplan for trafikksikkerhet på vei 2022–2025*,
- *Nasjonal tiltaksplan for trafikksikkerhet på veg 2018-2021*,
- *Narodowy Program Bezpieczeństwa Ruchu Drogowego 2021–2030*,
- *Program realizacyjny na lata 2024–2025* for *Narodowy Program Bezpieczeństwa Ruchu Drogowego 2021–2030*.

Table 31. Recommended RTS improvement measures in Poland and Norway

Poland	Norway
Technical equipment to improve RTS:	
Effective lighting and illumination of pedestrian crossings.	New road and pedestrian crossing lighting.
Supplementing guardrails in hazardous areas.	Supplementing guardrails in hazardous areas.
Installation of barriers separating opposing traffic directions.	Installation of barriers separating opposing traffic directions.
Installation of traffic lights at intersections and pedestrian crossings.	Installation of traffic lights at intersections and pedestrian crossings, verification of signal programs (indirect indication).
No equivalent.	Use of accident prevention measures for motorcycles, including clearly visible and flexible posts, dedicated barriers, etc.
Verification and improvement of road signage.	Widespread introduction of road line markings with thick-layered, warning sound effects when running over such markings.
Technical measures for traffic monitoring and management:	
Infrastructure for automatic speed control – local and section-based.	Infrastructure for automatic speed control.
Technical equipment for the Police to enhance speed monitoring capabilities. *	No equivalent (indirectly indicated by intensifying activities, which may be related to increased technical equipment).
Expansion of the national traffic management system on highways and expressways.	Implementation of known ITS solutions in existing road networks, especially on high-traffic highways.
No equivalent.	Development of next-generation speed control detectors in areas with high accident risk.
Technical measures for data collection and processing:	
No equivalent.	Infrastructure and development of a digital system for issuing and enforcing fines.

Poland	Norway
No equivalent.	Technical development of a system for recording all adverse events on the road network, including detailed spatial data and indicators of undesirable events.
Technical equipment for the Police for recording road incidents. *	No equivalent.
Technological support for autonomous automatic accident notification solutions.	No equivalent.
Emergency communication and rescue equipment:	
Infrastructure and equipment ensuring the operation of emergency communication systems.	No equivalent.
Development and equipping of emergency medical services – support for existing and construction of new emergency departments; development of Air Ambulance Service (support and construction of new landing sites and bases); integration of the dispatch system through the construction of new medical dispatch centres.	No equivalent.
Modernization of equipment and equipping of road rescue services.	No equivalent.
Vehicle equipment:	
No equivalent.	Pilot project for introducing alcohol interlocks as an alternative condition for holding a driving license for individuals with alcohol problems who wish to retain driving privileges.
No equivalent.	Development projects and improvements for automated driving.
No equivalent.	Projects to enhance the quality of digitally available speed limit data in vehicles.
Raising the safety standards of all vehicles – defining minimum safety standards for all vehicles (new and used) regarding active and passive safety systems.	Safer passenger cars. *
No equivalent.	Equipment for trucks allowing increasingly detailed monitoring of driver behaviour by employers. **
Introduction of modern technical solutions to streamline vehicle technical inspection processes.	No equivalent.
Road network expansion and reconstruction:	

Poland	Norway
Expansion of the highway network.	Completion of the highway network.
Development of roads with a central reservation to eliminate head-on collision risks (expressways).	Development of roads with a central reservation to eliminate head-on collision risks.
Construction of town bypasses.	Construction of town bypasses.
No equivalent.	Modernization of tunnels longer than 500 meters to meet new RTS requirements.
Construction of new road engineering structures (bridges, culverts) along with the addition of elements improving RTS (e.g., sidewalks) to replace existing structures that do not meet technical and safety standards.	No equivalent.
Installation of specialized safety nets to protect pedestrians from falling on engineering structures.	No equivalent.
No equivalent (indirect indication of the use of traffic calming measures and speed zoning).	Introduction of zones with speed limits of 30 km/h and 40 km/h in cities, with street transformations within these zones.
No equivalent.	No equivalent. Infrastructure solutions improving safety on the way to school and its surroundings as part of comprehensive programs like "Heart Zone - Hjertesone".
Comprehensive safety improvements within road expansion/reconstruction projects, e.g., widening of carriageways, correction of horizontal curves, elimination of conflict points by building additional lanes, reducing the number of exits from national roads; reconstruction of intersections, including building left-turn lanes, roundabouts; construction of sidewalks, bicycle paths or pedestrian and bicycle paths; construction of bus bays.	Local interventions including: construction of pedestrian crossings at various levels; construction of sidewalks; construction and designation of bicycle paths on carriageways; improvement of technical standards of critical road sections, removal of obstacles from road surroundings; correction of horizontal curves; construction of roundabouts.

*** Indirect indication through provisions for intensifying police activities.**

**** Vehicle safety equipment is not explicitly included in the road safety improvement programs, but it is a factor considered in the analysis of trends in measures describing the state of road safety.**

Source: own elaboration.

5.3.1. Road infrastructure measures – characteristics

Road infrastructure evidently impacts road safety, as it constitutes the environment where road users make crucial decisions that can result in events threatening health or life. Moreover, the type, quality, and condition of infrastructure largely determine the success of corrective manoeuvres for potential errors. Therefore, the design, construction, and maintenance of road infrastructure are oriented towards meeting fundamental requirements to ensure its potentially safe use. These requirements can be defined as follows[172, 173, 174]:

- **Consideration of vehicle dynamics**: This includes models describing the balance of forces acting on vehicles on curves, overtaking on road sections, lane changes with acceleration and deceleration, and braking distances.
- **Visibility for road users**: Ensuring visibility for various road situations that enables users to analyse the situation and make correct decisions.
- **Technical adaptation to user conditions**: Tailoring technical solutions for road elements, intersections, and interchanges to the psychological and psychophysical conditions of road users, including their spatial perception, information processing, and decision-making abilities in relation to road situations.
- **Effective optical guidance**: Providing clear visual guidance for drivers and ensuring early detection of lane changes (decision-making regarding driving direction).
- **Clarity of intersections and interchanges**: Ensuring the intelligibility of the functioning of intersections and interchanges.
- **Proper drainage**: Ensuring effective drainage to maintain good tire-road surface grip.
- **Clear, unambiguous, and visible signage**: Assisting perception, situational analysis, and decision-making with clear, unambiguous, and visible road signs.
- **Obstacle elimination or protection**: Removing or securing obstacles in the road environment to minimize the effects of potential collisions with these obstacles by vehicles.

The requirements listed above are commonly addressed in design regulations and various forms of recommendations promoting so-called **best practices**. Despite this, due to various constraints such as terrain, financial limitations, planning errors, or other design flaws, practical solutions sometimes create traffic safety hazards. These hazards can be addressed by correcting existing road infrastructure solutions. Therefore, based on collected experiences and the analysis of traffic incidents highlighting recurring errors, road safety improvement programs list recommended measures. This list may be extended to suit local conditions. However, such actions would be merely reactive and not aligned with contemporary knowledge about RTS conditions. Thus, among the measures listed in the table on the previous pages are also those derived from the understanding

[172] Gaca, S., Sandecki, T., & Jamroz, K. *Aspekty bezpieczeństwa ruchu w przepisach techniczno-budowlanych dotyczących infrastruktury drogowej*. *Drogownictwo*, no. 12, 2020.
[173] Gaca, S. *Rola przepisów technicznych i promocja dobrej praktyki jako środka poprawy bezpieczeństwa ruchu*. *Drogownictwo*, no. 4, 2012.
[174] Gaca, S., Jamroz, K., et al. *Analiza jakości technicznej projektów drogowych współfinansowanych z funduszy Unii Europejskiej wraz z rekomendacjami optymalizacji i szczegółowymi warunkami technicznymi projektowania, realizacji, eksploatacji i utrzymania dróg publicznych – raport z etapu I realizacji umowy DDP-UPOPT-22/18 na zlecenie Ministerstwa Infrastruktury*. PK, PG, PW, PWr, Transprojekt Gdański, BPBDiM Transprojekt – Warszawa, Warsaw, 2018.

of ongoing and anticipated changes in the needs of road users and the general conditions of road traffic operations. These changes include:

- **Changes in societal expectations regarding streets in urbanised areas**, which are considered public spaces with significant importance for comfort.
- **The growing importance of non-motorised road users and the development of so-called micromobility** through the use of new types of vehicles (e.g., scooters, personal transport devices).
- **Cultural and demographic changes** with an unpredictable impact on the development of road infrastructure, but existing knowledge highlights, for example, the increasing proportion of people with limited mobility, social dysfunctions, etc., which should be considered in road infrastructure design.
- **Changes in vehicle construction** with an increased role of systems supporting drivers' decisions and the need for road infrastructure to provide better "connectivity" between vehicles and roads.
- **The increasingly widespread use of ITS** and the need to integrate the technical equipment of these systems with road infrastructure.

Among the measures listed in the table on the previous pages, attention should also be paid to systemic actions involving the expansion of motorway networks, dual carriageways with a central reservation (expressways), and the construction of bypasses for towns and villages. These actions are primarily aimed at creating potentially safer traffic conditions by:

- **Providing high-standard technical solutions** that fully meet specified traffic safety requirements.
- **Segregating road users** with different characteristics according to the hierarchy of the road network—separating through traffic from local traffic, and separating motor vehicle traffic from pedestrian and cyclist traffic.
- **Redirecting vehicle traffic** from areas with high concentrations of hazards to potentially safer roads.
- **Regulating road access**—eliminating or limiting the frequency of intersections and driveways.

The introduction of zones with speed limits of 30 km/h and 40 km/h in cities, along with modifications to streets within these zones, as well as infrastructural solutions improving safety on the way to and around schools, may include elements of infrastructural solutions rather than just organisational measures. Generally, however, these solutions should be designed and implemented as comprehensive approaches that not only meet traffic safety requirements but also address societal expectations of streets as public spaces.

5.3.2. Technical measures – characteristics

In the category of **technical measures** affecting road safety, two types of measures can be conventionally distinguished:

- **Those closely linked to road infrastructure solutions and affecting its functionality** – technical road equipment and technical infrastructure related to traffic monitoring and management;
- **Those applied independently of road infrastructure solutions but having a significant impact on road safety –** measures related to data collection and processing, emergency communication and rescue equipment, and vehicle equipment.

The impact of the aforementioned technical road equipment measures on RTS is primarily related to their **influence on improving the perception of the road space and facilitating the processing of information gathered from this space**. The role of warning about unusual situations in traffic is also important. In this context, particular attention should be given to the role of lighting high-risk areas and clear road signage.

Although **road signage** is regulated by design standards, many errors are encountered in practice. A common issue is the "excessive signage" on roads, where signs are placed or chosen inappropriately relative to actual needs. Signage also plays a crucial role in ensuring "connectivity" between the road and vehicles equipped with driver assistance systems. Therefore, road safety improvement programmes include both the verification of signage (Poland) and the introduction of signage with additional warning functions (acoustic effects when driving over road markings).

The installation of **traffic lights** at intersections and pedestrian crossings is an obvious RTS measure, as it enforces temporal segregation of intersecting traffic streams. Such enforcement by traffic signals relieves road users from more complex situation analysis and decisions on when to start manoeuvres or cross conflict zones. However, to improve RTS, traffic lights must be implemented in a way that they are clearly visible, understandable, and suited to the geometric design of intersections or crossings. They should also not cause excessive delays that could lead to frustration and aggressive behaviour from road users.

Effective implementation of road traffic supervision and management requires technical support in the form of infrastructure located within the road corridor, including:

- automatic speed enforcement devices;
- devices related to the use of ITS solutions, including traffic detection systems, information transmission, and traffic management.

Automatic speed enforcement plays a significant role in road safety improvement programmes and can also operate in conjunction with ITS systems. In recent years, there has been particular development of **section-based speed measurement**, which requires dedicated traffic detection devices and data processing. Measurement techniques are well established and do not require separate discussion. However, it is important to mention a critical factor affecting the effectiveness of automatic speed enforcement. This includes the reliability of recording speed violations and the full enforcement of penalties for such violations. This necessitates the provision of equipment for the agencies responsible for speed enforcement. In the case of police activities, it is crucial to complement section-based speed enforcement with local oversight in accident hotspots or areas identified as high-risk based on proactive methods of identifying such locations.

The **measures related to data collection and processing** mentioned in RTS improvement programmes are considered distinct actions but should be evaluated in close relation to the development of road infrastructure safety management systems and their impact on driver behaviour. Therefore, their detailed solutions will derive from the overall concept of these systems.

Emergency communication and rescue equipment are highlighted as a significant issue in Poland. Attention is drawn to the critical importance of the response time for rescue teams to reach accident victims and the subsequent provision of assistance by qualified medical personnel. Therefore, a crucial task is the development of infrastructure related to incident notification in road traffic and the coordinated transmission of this information to emergency services at accident sites and road traffic management authorities.

Emergency communication measures include notification systems on motorways (emergency phones) and ensuring mobile phone coverage along major road corridors. The eCall system, if its use is expanded to all vehicle categories, can also serve this function.

A separate group of infrastructure actions involves the **expansion of emergency notification centres** under the "112" system and the **equipping of medical rescue services and the development of the Air Ambulance Service** (Polish: *Lotnicze Pogotowie Ratunkowe*, LPR). These actions are covered by sector-specific implementation programmes. For the Air Ambulance Service, this included the expansion of LPR bases and the enhancement of equipment with medical, workshop, and IT resources.

The impact on the equipment of vehicles participating in road traffic is indirect by setting minimum safety standards for vehicles permitted to operate, but it is also important to create conditions that encourage vehicle users to enhance their equipment or purchase new vehicles with advanced assistance and safety systems. Modern vehicles can be equipped with the following systems to improve road safety:

- Electronic Stability Control (ESC).
- Adaptive Cruise Control (ACC) with Collision Warning and Emergency Braking.
- Lane Departure Warning (LDW).
- Increased number of airbags, including those for pedestrian protection.
- Enhanced passive safety features for adults in the vehicle (extended front and side crash testing).
- Pedestrian Detection with Automatic Emergency Braking.
- Alcohol interlocks.
- Seatbelt reminders.

Direct measures impacting vehicle equipment include those outlined in the Norwegian RTS programme as **pilot project proposals for introducing alcohol interlocks** as an alternative condition for holding a driving licence for individuals with alcohol problems, and equipping heavy goods vehicles to enable increasingly detailed monitoring of driver behaviour by employers.

The issue of the **development of autonomous vehicles** and their impact on road safety is addressed in many research studies, but practical recommendations in the form of mandatory standards for shaping road infrastructure and its equipment have not yet been formulated.

5.4. Application of other measures

Due to the complex array of factors determining road safety, with human factors playing a dominant role, the application of the technical and infrastructural measures for improving RTS described in the previous subsections can only partially influence this safety. RTS improvement programmes also place significant importance on a set of actions related to **shaping a safety culture in road traffic** and modifying the behaviour of road users to align with safe driving principles. Furthermore, a crucial group of measures involves gaining **public acceptance for implemented measures**, especially those with a restrictive nature. All these aspects are reflected in the priorities of road safety programmes described in one of the previous subsections, both in Poland and Norway.

Non-technical and non-infrastructural measures and actions aimed at improving road safety include:

- **Organising road safety management structures.**
- **Actions to shape a road safety culture**, including education and legislation.
- **Systems for assessing and identifying road safety hazards**.
- **Control procedures** related to infrastructure and traffic management.
- **Organisation of traffic supervision and enforcement of traffic laws**.
- **The legal system** concerning traffic supervision, penalties, and assistance.
- **Information and advertising campaigns**.

The above measures and actions are described in RTS programs through specific implementation tasks. The table below summarises these measures in a way that facilitates comparison between Poland and Norway. From this comparison, the following conclusions can be drawn:

- The RTS management system in Poland still requires improvement in terms of effectiveness and establishing a stable source of funding for road safety programs.
- The measures for shaping road safety culture outlined in the programs are more detailed in the Norwegian program and represent a more comprehensive approach to this issue.
- Actions related to the identification of road safety hazards are similar in both Poland and Norway.
- Control procedures related to infrastructure and traffic management are more developed in the Norwegian road safety program.
- The organization of traffic supervision and enforcement of traffic laws is similar in both Poland and Norway, tailored to the identified road safety hazards and issues.
- The legal system concerning traffic supervision, penalties, and assistance differs in development phases between Poland and Norway.
- The information and advertising campaigns in the road safety programs are tailored to the identified road safety hazards and issues in both Poland and Norway. They are more intensive in Norway and involve the engagement of multiple institutions.

Table 32. Recommended non-technical and non-infrastructural RTS improvement in Poland and Norway

Poland	Norway
Organisation or RTS management structures:	
Strengthening and restructuring the National RTS Council / Secretariat of the National RTS Council as the National Leading Institution for RTS.	No direct equivalent.
Strengthening and restructuring the executive units of the Voivodeship RTS Councils, particularly in terms of organisational and financial dimensions.	• County authorities, with significant political engagement and support, will prepare plans and/or strategies concerning road safety. • County authorities will further develop and strengthen the county road safety forums as a venue for exchanging experiences and new knowledge. • Metropolitan authorities will ensure that RTS is a key theme in area and transport plans for urban areas and will set goals and strategies for RTS.
Verification of existing regulations and adoption of a uniform law guaranteeing legal consistency and complementarity, as well as organisational and financial stability of systemic solutions. Legislative support for the implementation of all action pillars.	No direct equivalent.
Creation of funding mechanisms for road safety management, including the establishment of a dedicated fund for regional tasks.	The Norwegian Public Roads Administration (*Statens vegvesen*, SV) will manage a grant programme for safer school roads and local environments, in close collaboration with regional authorities and *Trygg Trafikk*.
Long-term planning of research topics and scope in areas directly or indirectly related to RTS.	• SV will lead an intersectoral forum to assess future knowledge needs in RTS. • From 2022 to 2025, SV will implement a research and development programme in RTS.
Planning and implementation of training processes at the national and regional levels.	SV will initiate the creation of a forum for exchanging experiences and discussing RTS measures in 9 urban areas where agreements on urban development have been made or are in progress.
No equivalent.	County authorities are required to support and encourage municipalities and non-governmental organisations to undertake actions that enhance the safety of schoolchildren on school roads and in local environments, and to contribute to the safe behaviour of children and adolescents.
No equivalent.	*Trygg Trafikk* will implement procedures for certifying “road safety municipalities” and assist municipalities in ensuring road safety and planning for kindergartens and schools.

Poland	Norway
No equivalent.	During the planning period, metropolitan municipalities will have significant and operational RTS plans.
No equivalent.	The National Accident Investigation Commission (*Statens havarikommisjon*, SHK) is the investigative body responsible for conducting independent investigations into public safety matters in the case of serious accidents and incidents across all transport modes and in the armed forces.
Shaping RTS culture:	
Development of a coherent system of traffic education focusing on key road safety issues.	• The organisation "Young in Traffic" (*Ung i Trafikken*) will continue the project aimed at developing safe attitudes in road traffic through the "Death Trip" competition and the "Journey of Death" travelling exhibition. • "Young in Traffic" (*Ung i Trafikken*) will update the e-learning course "Drunk in Traffic" to make it accessible for the target audience using various digital devices. • The prison service will prepare professional content on drug driving, appropriate for offenders serving sentences outside prison under electronic monitoring. • The Norwegian Cycling Association (*Norges Cykleforbund*) will work on bicycle traffic education in primary schools through the *Cykkelkids/Sykkelskolen* training programme. • *Trygg Trafikk* will continue to develop content for courses for primary school teachers and offer both digital and physical courses in research institutions. • SV will introduce requirements for continuous education and legal certification for traffic education teachers.
No equivalent.	*Trygg Trafikk* will provide health clinics, adult education units, and the Police with information on proper child safety in cars.
No equivalent.	County authorities will implement measures to ensure legal protection for children during school transport, including targeted actions on behaviour and equipment requirements for buses.
Educational activities aimed at improving the safety of unprotected road users, with particular emphasis on individuals aged 60 and over.	• SV will continue to develop refresher courses "Driver 65+" and work on increasing the number of participants, aiming for the annual number of participants to correspond to 30% of the 70-year-old population with a driving license. • The Association of Retirees will organise and conduct road safety courses for older pedestrians based on materials prepared by SV, which will provide professional updates and adaptations of existing training materials. • *Trygg Trafikk* will develop and distribute materials containing road safety guidelines among municipal authorities dealing with elderly individuals.

Poland	Norway
Legislative actions with an interventionist character, related to: undesirable behaviours, driver training and examination systems, preventive and re-educational measures, specifically targeting high-risk drivers.	SV, on behalf of the Ministry of Transport, will contribute to the effective implementation of stricter regulations concerning the use of electric scooters and other small electric vehicles, and will assess the need for further actions.
Nationwide educational and informational campaign targeting soldiers and Ministry of National Defence employees – road users – aimed at raising awareness about the negative impact of psychoactive substances on road behaviour.	No equivalent.
Comprehensive educational and promotional activities in first aid.	No equivalent.
No equivalent.	The organisation "Young in Traffic" (*Ung i Trafikken*) will influence young people to drive micro-mobility vehicles safely by conducting digital campaigns and physical events, including blood alcohol content testing.
No equivalent.	SV will lead a national motorcycle safety forum, with the intention of gathering and engaging central and relevant professional communities.
System for assessing and identifying RTS risks:	
Establishment of a comprehensive, cohesive, and integrated database as part of a broader Road Safety Information System in Poland.	• SV, in cooperation with the Police, will prepare revised guidelines for reporting road accidents by the Police, including regulations to ensure high-quality information for road safety work and the electronic transfer of data from the Police to SV. • SV will facilitate the migration of the accident database to a new technological platform.
Identification of high-risk roads, including the preparation of a safety rating based on risk maps.	• The highway management company Nye Veier AS has developed a system for recording all incidents on its roads to detect errors and systematics of events. This system will be further developed to include good tracking and indicators of undesirable events. • SV will conduct a thematic analysis of fatal accidents, with a more detailed examination of selected critical safety processes in operations and maintenance.
Establishment of a database on the actual health consequences of accidents.	Norway has a National Trauma Registry (NTR) that assesses the extent and characteristics of severely injured patients, as well as the scope and completeness of trauma treatment. The registry includes data on the mechanism of injury, including whether the injury was caused by a road accident.

Poland	Norway
Development of methodology and analysis of trauma treatment costs following road accidents.	No equivalent.
Monitoring of selected attitudes and opinions of road users.	• The social organization *"MA – Rusfri Trafikk,"* together with the Mental Health Foundation, will conduct a survey to understand people's attitudes towards the impairing effects of cannabis and driving. • *Trygg Trafikk*, in cooperation with the Police, will conduct statistical surveys every two years regarding the use of child protection devices.
No equivalent.	SV will initiate research to gain greater insight into the relationship between technology and inattention, as well as the role of the driver in automated vehicles.
Control procedures related to infrastructure and road management:	
Widespread implementation of independent audits and road safety reviews across the entire road network in Poland.	• Norway has a Road Safety Audit system and road reviews in place. • Local authorities will conduct road safety assessments on priority cycling routes and ensure prioritization of resources for action. • SV will systematically review pedestrian pathways on the national road network and identify needs for action, with a particular focus on lighting.
Classification of road sections based on the concentration of fatal accidents and network safety (national roads).	No equivalent.
No equivalent.	The Norwegian Motorcycle Union (*Norsk Motorcykkel Union*, NMCU), in cooperation with road owners, will take the initiative and participate in road research and thematic inspections (with particular attention to critical road conditions) of road surroundings and motorcycle barriers.
No equivalent.	SV will improve interaction between Traffic Control Centers (*Veitrafikksentralen*e, VTS) and road owners / contractors to systematically monitor reported conditions affecting road safety.
Traffic supervision and participant control:	
Intensification of supervision regarding mandatory vehicle equipment and the correct use of protective devices and systems.	Control of seat belt use and child restraint systems.
Improvement of oversight for Vehicle Inspection Stations.	No equivalent.

Poland	Norway
Intensification of supervision regarding mandatory vehicle equipment and the correct use of protective devices and systems in vehicles.	Controls in freight transport, including vehicle technical condition, winter equipment, load securing, and working and rest time.
Intensification and optimization of actions by the Police and Road Transport Inspection (ITD) in vehicle technical condition checks.	No equivalent.
Control of vehicle operation after consumption of alcohol, drugs, and similarly acting substances.	The police will tighten procedures for checking all drivers involved in accidents for intoxicants.
Introduction of the possibility for employers to conduct sobriety checks on employees and checks for substances similar to alcohol.	No equivalent.
Control of driving with distracted attention, particularly by mobile device.	Police will continue to focus on road inattention and conduct checks specifically targeting mobile phone use
Organizing competencies of institutions responsible for speed monitoring.	Work on implementing digital issuance and processing of fines.
Development of system assumptions and implementation of a unified system for victim assistance, including administrative, health, and legal support.	No equivalent.
No equivalent.	V will develop legislation and regulate the use of new data sources to enhance road safety.
Information and advertising campaigns:	
Preparation and implementation of a coherent information policy concerning actions included in the RTS program.	No equivalent.
Educational campaigns promoting safety on national roads.	No direct equivalent.
Other information and advertising campaigns, competitions (examples): • *"Who asks, doesn't get lost – advice from the ITD"* – informational activities conducted via the social media channels of the Chief Inspectorate of Road Transport (GITD), aimed at professional drivers and transport industry entrepreneurs. • World Day of Remembrance for Road Traffic Victims, organised by the Secretariat of the National RTS Council (KRBRD).	• SV will continue the campaign for bus seat belts in cooperation with the Norwegian Confederation of Transport, the NHO Transport employers' association, and the YRK trade union. • *Trygg Trafikk,* with the support of the If insurance company, will conduct an annual campaign on the proper securing of children in cars, highlighting the importance of rear-facing seats for the 1–3 age group. • SV will continue the nationwide speed awareness campaign.

Poland	Norway
• The "Best Young Driver" competition organised by the Polish Automobile and Motorcycle Association (PZM). • National road traffic safety tournaments organised by the Polish Automobile and Motorcycle Association, aimed at children and youth. • Preparation of a Polish version of the New Zealand road safety campaign on speeding titled *"Other people make mistakes. Slow down"*, by the Secretariat of the National RTS Council (KRBRD).	• Twice a year, in cooperation with the police and collaborating municipalities, anti-drunk driving campaigns will be organised. • SV will continue the national road traffic safety (RTS) awareness campaign. • *Trygg Trafikk,* with the support of Fremtind insurance company, will develop and launch a digital campaign focused on distractions caused by new technology in cars. • SV, in collaboration with *Trygg Trafikk* and the RTS committee of Innlandet County, will organise a road safety day for 10th-grade students at the Norwegian Road Museum. A digital curriculum based on the road safety day will be distributed to schools across the country during the planning phase. • *Trygg Trafikk*, with the support of Tryg Forsikring insurance company, will carry out a campaign promoting the use of bicycle helmets. • The Norwegian Cyclists' Association will run a public awareness campaign each autumn called "Visible Cyclist." • SV will launch a new campaign on road interaction, particularly between electric scooters and other road users. • SV will prepare information on the risks pedestrians and cyclists face in truck blind spots, as well as on measures to reduce these risks. • *Trygg Trafikk* will conduct annual nationwide and local activities promoting the use of reflective elements.

Source: own elaboration based on: *Nasjonal tiltaksplan for trafikksikkerhet på vei 2022–2025*, *Narodowy Program Bezpieczeństwa Ruchu drogowego 2021–2030, Program realizacyjny na lata 2024–2025* for *Narodowy Program Bezpieczeństwa Ruchu Drogowego 2021–2030*.

6

Methods of RTS assessment in Norway and Poland

6. METHODS OF RTS ASSESSMENT IN NORWAY AND POLAND

6.1. RTS analyses and data sources

In managing RTS, at least two key phases are applied: safety risk assessment and response to identified risks.[175]

Safety risk assessment (description of safety conditions) is a process of identifying and analysing risks and sources of risks based on data from databases or on-site inspections. It involves estimating the level of risk, determining the risk classification, and checking the acceptability of risk levels according to established RTS standards (classifications). The assessment includes identifying potential hazards, analysing their sources, and measuring the probability and impact of these hazards on road safety. A classification system is used to rank the risk levels, ensuring compliance with national RTS standards.

Responding to identified risks includes: managing risks, monitoring risks, and communicating road traffic safety risks. Managing identified risks involves estimating the potential for risk reduction, planning and initially selecting interventions (improvements) and actions necessary to reduce risk levels, assessing effectiveness, and selecting the most effective and efficient interventions and actions, implementing selected improvements and corrective actions. Monitoring risk levels includes conducting systematic or periodic (3–5 years) assessments of the safety risk levels in the analysed area. Communicating about safety risks involves the transmission and exchange of information with RTS management entities and road users via mass media, reports, announcements, hazard maps, etc.

6.1.1. Polish data sources and collection systems

Data sources. The primary data come from the Accident and Collision Register (Polish: *System Ewidencji Wypadków i Kolizji*, SEWIK), managed by the General Police Headquarters based on the Order of the Chief of Police. This database is built on reports from the Police road services regarding dangerous incidents occurring on the road network.[176] The report includes, among other things, a two-sided form containing a sketch of the incident location, along with GPS coordinates that enable the precise location of the incident, as well as tables containing nearly 200 fields characterizing the type of incident, its location, the geometric characteristics of the road structure, the type and condition of the road surface, traffic control elements, and the weather and environmental conditions at the site of the incident. It also includes the characteristics and condition of the vehicles involved, the causes and circumstances of the incident (including the behaviour of the driver and the pedestrian involved), the characteristics of the road users involved, and other necessary information.

[175] Jamroz, K. *Metoda zarządzania ryzykiem w inżynierii drogowej*. Gdańsk, 2011.
[176] Order No. 38 of the Chief of Police dated December 15, 2021, amending the order on the methods and forms of maintaining traffic incident statistics by the Police. *Official Journal of the Chief of Police*, December 16, 2021, item 181.

Data Assessment: In 2015, the definitions of accidents and types of victims[177] were updated, and it was established that: *"...a traffic accident is a traffic event resulting in a person being killed or injured; a traffic collision is a traffic event resulting only in material damage; a traffic event includes both traffic accidents and traffic collisions; a fatal accident victim is a person who died at the scene of the traffic accident or within 30 days of the accident due to injuries sustained; a seriously injured person is one who has suffered a health impairment such as: a) loss of vision, hearing, speech, reproductive ability, other severe disability, incurable severe illness or a long-term illness that seriously threatens life, permanent mental illness, total significant permanent disability to work in the profession, or permanent, significant disfigurement or distortion of the body, b) other injuries causing a disruption of body function or health disorder lasting more than 7 days; a lightly injured person is one whom a doctor or medical rescuer has determined to have suffered health impairment or injuries other than those of seriously injured victims..."*

Apart from fatal victims (either at the scene or dying within 30 days), the definitions of seriously and lightly injured victims were adopted arbitrarily. Many countries, including Norway, use the Abbreviated Injury Scale (AIS). The results of this scale are closely related to mortality risk. Injuries in various areas are assessed on a 6-point scale, where: 1 denotes minor injuries, 2 – moderate, 3 – serious, 4 – very serious, 5 – critical, 6 – injuries likely to cause death. In AIS, the highest category denotes injuries leading inevitably to the patient's death, regardless of any interventions. The AIS scale was created in 1969 and has since been updated several times. Based on this scale, the MAIS (*Maximum of Abbreviated Injury Scale*) was developed by the Association for the Advancement of Automotive Medicine, removing level 6 – non-survivable injuries. Seriously injured victims are classified as MAIS 3+, while other victims are classified as moderately or lightly injured.

Based on the experience of many countries, it is necessary to regulate the definitions of medically confirmed injured victims in Poland. The lack of clear criteria for different categories of injured victims has led to significant confusion in the analysis and assessment of road safety levels in Poland. This requires a stance from the National RTS Council and the National Police Headquarters regarding the adoption of European methods for classifying seriously injured victims in accidents and the standardization of the accident and victim classification system.

The assessment of the system for collecting, storing, and processing data on road accidents can be illustrated using the example of the Warmian-Masurian Voivodeship.[178]The conclusions from this assessment were:

- There is a lack of a systematic approach to collecting data on road events. In Poland, databases are created at every level of RTS management that are not interconnected or consistent with each other. The only common element is the acquisition of data from SEWIK.
- There is a lack of data verification. Accident data are not systematically verified, which hinders analysis and use of the information.

[177] Zarządzenie nr 31 Komendanta Głównego Policji z dnia 22 października 2015 r. w sprawie metod i form prowadzenia przez Policję statystyki zdarzeń drogowych. Dziennik Urzędowy KGP, z 26 X 2015 r. poz. 85.
[178] Żukowska, J., & Radzikowski, T. (2015). Regionalne i lokalne bazy danych o bezpieczeństwie ruchu drogowego w Polsce – przegląd doświadczeń i wyzwania na przyszłość. *Transport Miejski i Regionalny*, 4, 32–38.

- There is a lack of access to additional data. Important information for road safety analysis includes additional data such as user behaviours, e.g., speed, use of seat belts, or driving under the influence of alcohol or other intoxicants. However, such data are rarely collected at the regional level.
- There is a lack of systematic monitoring that would allow for the investigation of causes and factors affecting safety levels.

Databases. The primary database is the police database SEWIK. In this database, data is collected through the Traffic Departments of the District and Provincial Police Headquarters from reports of all traffic accidents and collisions reported to the Police. Each year, data on 20,000 to 40,000 accidents and 350,000 to 400,000 collisions are collected. Each incident is assigned a sequential ID number, with sensitive data being obscured. Remaining data is recorded according to the sections specified in the traffic incident report form. GPS location data is also recorded. After verifying and closing incidents from the previous year, aggregated and non-sensitive data on accidents is transferred to interested institutions at the turn of the first and second quarters of the following year. This data serves as the basis for the annual updating of many traffic incident databases, either in digital form or as text reports, including: the Road Traffic Safety Observatory at the Motor Transport Institute in Warsaw, GDDKiA (both Central Office and Regional Offices), Voivodeship RTS Councils, Voivodeship Road Managements, County Road Managements, City Road Managements, universities, and other institutions involved in traffic safety analysis and assessment.

The Road Traffic Safety Observatory at the Motor Transport Institute is equipped with a reporting and data analysis system for traffic incidents according to selected data categories, areas, analysis periods, and for presenting selected results on maps. It is updated annually with data from the SEWIK database.

The database of accidents on national roads managed by the General Directorate for National Roads and Motorways (GDDKiA) is fed with data on accidents (only) occurring on national roads from the SEWIK database. After verification (mainly localization) by the Regional Offices, the database is used for managing the safety of the national road network administered by GDDKiA.

The database of accidents in the voivodeships is fed with data on accidents and collisions occurring on all roads within the voivodeship from the SEWIK database. These databases are maintained by the Voivodeship RTS Councils and the Infrastructure Departments of the Marshal Offices. After verification (mainly localization) by the managing institutions, the database is used for managing safety in the voivodeship area.

The database of accidents on local roads is fed with data on accidents (only) occurring on local roads from the SEWIK database. After verification (mainly localization) by the managing personnel, the database is used for managing the safety of the local road network (voivodeship, county, municipal).

Research databases of incidents are fed with data on traffic incidents occurring on the entire road network in Poland from the SEWIK database. After verification (mainly localization) by the managing personnel, the database is used for conducting research related to road traffic safety in various institutions.

6.1.2. Norwegian data sources and systems for data collection

Statistics on road traffic accidents involving personal injuries and other accidents causing significant material damage have been collected in Norway since 1939. The obligation to report accidents to the police where no personal injuries occurred was largely abolished in 1957, and from 1964, statistics only included accidents resulting in "significant" personal injuries. An accident is defined as a road traffic event involving at least one road vehicle traveling on a public or private road accessible to the public, resulting in at least one person being injured or killed.

Data are based on police reports and there may be underreporting due to insufficient reporting (especially for accidents without fatalities and accidents not involving motor vehicles). This means that less serious accidents are particularly underrepresented in the statistics on injuries. Vehicles include civilian and military motor vehicles, rail vehicles, and non-motorized vehicles. Only fatalities occurring within 30 days from the date of the accident are included in the road traffic accident statistics. Suicides and accidents caused by poor health are excluded from the statistics.

Forms that Norwegian police used to describe individual accidents were updated in 1954, 1964, and 1977 and were made available to the police, Statistics Norway (SSB), and *Statens vegvesen*. The number of accidents recorded by SSB is approximately 9,000 per year, while hospital data (collected in the non-public National Injury Register, NTR) show that over 40,000 people are injured in road traffic accidents each year. Additionally, it is estimated that around 90% of serious accidents involving cyclists are recorded in the police database, whereas for other types of participants, only 100% of fatalities, 37% of seriously injured, and about 15% of slightly injured are registered. In 2023, around 580 serious injuries were recorded, whereas it is estimated that the actual number could be around 1,500–2,000. This is a serious issue concerning the quality of data collection. Furthermore, the Norwegian classification of accident victims deviates from the international AIS classification.

Given these conditions, several actions have been initiated in Norway's National Plan of Action for Road Safety 2022-2025 and in research projects to adapt the classification of injured victims to the AIS injury scale and to explore the use of data from NTR. Five different projects have been proposed to be carried out over the next four years to obtain a clearer picture of the actual number of seriously injured individuals. These projects involve close cooperation with the health sector. Access to the Norwegian Patient Register and the National Injury Register will be essential to determine the actual number of seriously injured victims. The Ministry of Transport (particularly the SV) and the Ministry of Health are responsible for addressing these issues.

Databases. The police record data on road traffic accidents involving bodily injuries in their own internal registration system. This data is collected on the first working day of each month and, after encryption, is sent to SBB and SV at the end of the month.

Statistics Norway (SSB) maintains a database that includes data on road traffic accident victims in Norway since 1946.

The Norwegian Public Roads Administration (SV) operates the National Road Database (*Nasjonal vegdatabank*, NVDB). This database contains specialized data represented as road objects with a digital representation of the physical road network (using a new reference system),[179] including both geometry and topology, for various purposes. One component of this database is the accident data catalogue.

SV registers information about road traffic accidents primarily in an **internal database called TRULS.**[180] This database includes personal data and specific categories of personal data related to road traffic accidents. The registered users are those who were involved in a road traffic accident resulting in bodily injuries on a public road. The data source is SSB, which in turn obtains the data from the police. The main purpose of processing information in TRULS is to facilitate scientific efforts to reduce the number of deaths and serious injuries in road traffic. The data serves as the basis for creating accident statistics, which in turn provide the foundation for recommending road safety measures. SV is the data controller. Processing in TRULS includes the following information:

- Report number (police case number) related to the accident,
- Date of birth and gender of the individuals involved in the accident (not social security number, name, or address),
- Postal code of the driver's address,
- Identification mark of the motor vehicle involved in the accident,
- Accident coordinates,
- Time and description of the location,
- Degree of injuries of the individuals involved in the accident (fatalities / very seriously injured / seriously injured, slightly injured, uninjured, and unknown).

Individuals who were not injured in the accident are usually not registered. The date of birth and the registration number of motor vehicles are used internally for registration purposes and are removed after the case is closed, prior to publication. Other information is not subject to any deletion term and is processed for the duration of the database's use. TRULS may contain personal data belonging to individuals whom SV cannot identify. Accidents likely resulting from personal fault (suicide attempts) or those caused by the poor health condition of road users are not included in TRULS.

The main principle is that information from TRULS is used exclusively internally by the road administration and other public institutions that have been granted access to this database, as they deal with RTS in accordance with Article 43b of the Norwegian Road Traffic Act. Currently, SV provides access to TRULS to counties, the police, the Norwegian Accident Investigation Board, and road management authorities. Public sector employees, including SV employees, are required to maintain confidentiality regarding any personal information contained in TRULS that pertains to someone's personal situation. The time and location of road traffic accidents are made publicly available through the Vegkart service, while aggregated data is accessible through the Trine service.

[179] *Nasjonalt vegreferansesystem. Håndbok V830, Statens vegvesen*. Oslo, 2020.
[180] *Om ulykkesstatistikk, Statens vegvesen*, https://www.vegvesen.no/fag/fokusomrader/trafikksikkerhet/ulykkesdata/om-ulykkesstatistikk (accessed: August 16, 2024).

6.1.3. Methods for conducting assessments and analyses

To carry out comprehensive RTS improvement actions, various RTS analyses are necessary, including global, general, detailed, and in-depth analyses.

- Global analyses are conducted cyclically and focus on presenting annual trends of general RTS indicators across the country and international comparisons.

In Poland, after data verification, the police publish an annual report on road accidents in Poland (in both printed versions distributed to various institutions and online versions). The report, consisting of 11 chapters, contains synthesized information on: general data on the level of motorization, accidents and victims, time and location of accidents, types and causes of accidents, accident victims, vulnerable road users, alcohol, fatal accidents, foreign nationals, and the RTS level in European countries.

Additionally, the managers of dedicated databases publish (mostly online) reports on RTS in the voivodeship, county, city, or managed road network.

In Norway, the Statistical Office (SSB) provides basic data on accidents registered in its database. This includes a few tables summarizing essential data on road accidents and their victims on the road network.

Norwegian Traffic Police (UP), on behalf of the Police Directorate, prepares systematic annual reports on RTS. Since 2022,[181] this approximately 60-page report (published in PDF format on the Police website) consists of 9 main sections (excluding the introduction and summary) covering the following aspects: 1. Changes in the number of accidents, 2. Speed, 3. Driving under the influence of drugs, 4. Inattention, distraction, and fatigue, 5. Protective equipment (safety measures), 6. Aggressive or other dangerous behaviour on the road, 7. Trends and changes affecting RTS, 8. Annexes (tables, and in 2021, maps showing the locations of fatal and seriously injured accidents on the road network) and bibliography. Especially important is section 7, which analyses trends in various types of accidents, road user behaviour, and many other aspects, and provides guidelines for Police work for the following year.

SV publishes annual standard reports on accidents and accident victims, broken down by year, county, municipality, road categories, types of vehicles involved, types of road users, types of accidents, types of road infrastructure, speed limits, etc. If the reports are unavailable, they can be ordered via email. The basic search criteria are the county and the year. SV disseminates information about NVDB, and individual road managers and institutions using the database can participate in an information exchange and request forum held three times a year.

[181] *Politiets tilstandsanalyse for 2023. Trafikksikkerhetsarbeid*. Politiet. Oslo, 2023.

General safety analyses involve ranking and classifying selected characteristics of road incidents and their consequences for the purpose of identifying risks related to the behaviour of road users (e.g., pedestrians, young drivers, drivers under the influence of substances, driving at dangerous speeds), assessing road traffic safety levels (e.g., types of roads, intersections, pedestrian crossings), and identifying hazardous locations (such as sections of roads, intersections, pedestrian crossings, etc.).

Detailed analyses focus on identifying factors affecting the safety of a specific object or element of the road network (e.g., a road section, junction, intersection, or pedestrian crossing), selecting improvement measures, and assessing their effectiveness and efficiency.

In-depth analyses aim to explore factors influencing RTS, considering specific issues, types of incidents, or types of losses (victims).

General analyses of the state of safety include the ranking and classification of selected characteristics of road events and their consequences for the purposes of: identifying hazard problems arising from the behaviour of road users (e.g., pedestrians, young drivers, drivers under the influence of substances, driving at dangerous speeds), assessing the level of road safety (e.g., types of roads, intersections, pedestrian crossings), and identifying hazardous locations (sections, intersections, pedestrian crossings, etc.).

In Poland, such analyses are conducted as part of research carried out by academic teams commissioned by institutions that organise research (such as the National Centre for Research and Development, NCBR) or road management institutions (road administrations, the Secretariat of the National RTS Council, KRBRD, or the Ministry of Infrastructure).

In Norway, a significant portion of RTS research is conducted by the Institute of Transport Economics (*Transportøkonomisk institutt*, TØI). A separate category of in-depth analyses is carried out by Accident Investigation Commissions.

In Poland, accident investigations are well-developed in the aviation, maritime, and railway sectors. However, accident investigations in road transport are still in the early stages of development. There is the potential to establish commissions for analysing fatal road accidents, similar to those in other transport sectors, but these operate locally and are formed as needed.

In Norway, the National Accident Investigation Board (*Statens havarikommisjon*, SHK) is a permanent, independent investigative body dealing with transport accidents. The purpose of SHK investigations is to clarify the sequence of events and factors considered important for preventing accidents in aviation, maritime, rail, and road transport. SHK does not assign fault or responsibility for the accident. The SHK road team investigates selected types of serious road accidents in Norway. The team includes experts with specialist knowledge in operational tasks, road user behaviour and human factors, vehicles and technology, road and traffic engineering, the military, and

organisational and management issues. The goal of these investigations is to clarify the sequence of events and causes of accidents and, as a result, improve RTS. All SHK investigation reports are public and continuously published on the SHK website. The final investigation report is sent to the Ministry of Transport, which takes necessary measures to properly address all safety recommendations. The Norwegian Road Safety Authority is responsible, on behalf of the Ministry of Transport, for implementing all RTS-related recommendations.

In-depth analyses are also conducted by the Norwegian National Road Policing Service (UP). For instance, in 2022, a study was carried out on the illegal use of mobile phones while driving,[182] covering almost 32,000 drivers. The results were recorded based on the type of vehicle (heavy goods vehicle or passenger car), time of day (morning, noon, or afternoon), type of road (densely populated areas, national roads, and highways), and by county. The overall result of the study showed that 2.9% of drivers illegally used mobile phones, with 0.7% for calls and 2.2% for sending/reading SMS. Compared to 2019, the study indicated a general decrease in illegal mobile phone use but an increase in SMS-related phone usage.

In 2024, a report was produced based on investigations into fatal accidents in 2022.[183] This period was marked by a significant rise in road fatalities in Norway. A total of 116 people died in road accidents, reflecting a nearly 45% increase compared to 2021, when 80 people died. Such numbers have not been recorded in the past five years, serving as a reminder of the continued need to contribute to preventing serious road accidents. To accurately understand the main causes of serious road accidents and identify who is responsible, UP has been publishing situational analyses for several years on behalf of the Norwegian Police Directorate, focusing on police efforts related to RTS. UP conducted a comprehensive investigation based on criminal case documents regarding fatal accidents in 2022. The goal was to create a knowledge base for prioritising police control measures and other preventive actions in the coming year, and the conclusions from this analysis were presented in a report. An important source for the analysis was police data, as well as the report from SV on serious accident analyses for 2022. The findings of this analysis provide an invaluable knowledge base for planning police actions for RTS in 2024. It was highlighted that poor decisions by road users often contribute to fatal accidents. Factors such as lack of attention, driving skills, overconfidence, speeding, and intoxication were identified as recurring issues that need to be addressed. Furthermore, the analysis identified head-on collisions and vehicles running off the road as the most common types of accidents, with passenger/delivery cars and motorcycles being the most frequently involved vehicles. The conclusion emphasized that, to move closer to meeting the goals of Vision Zero, it is crucial for the police to prioritise preventive control measures that have the greatest impact on RTS.

6.1.4. Method of using assessment and analyses in Road Infrastructure Safety Management

The Road Infrastructure Safety Management System (RISMS) is standardized across the European Union. In 2008, a procedure for managing road infrastructure safety was developed and

[182] *Veikantundersøkelse – Mobiltelefon. En studie av ulovlig bruk av mobiltelefon i trafikken – 2022.* Utrykningspolitiet, Oslo, 2022.
[183] *Politiets tilstandsanalyse for 2024. Trafikksikkerhetsarbeid.* Politidirektoratet/Utrykningspolitiet, Oslo, 2024.

recommended for implementation under Directive 2008/96/EC, which in Poland was formalized by provisions in the Public Roads Act of 2012. The process utilized tools applied at various levels of risk management (strategic, tactical, and operational) and at different stages of the road infrastructure lifecycle (planning, design, construction, and maintenance). Four tools (methods) used at different stages of the road infrastructure lifecycle were developed:

- **RTS Assessment** – assesses the impact of a planned road on the network of cooperating or surrounding roads (predictive).
- **RTS Audit** – identifies hazards and sources of hazards, including errors and defects in road project designs and their four-phase implementation (proactive).
- **Road Infrastructure Safety Management (RISM)** – classifies the safety of the existing road network (reactive).
- **Road Infrastructure Inspection** – inspection to identify hazards and sources of hazards in existing infrastructure and communicate risk at various stages of management (proactive).

In 2019, the Council and European Parliament introduced Directive 2019/1936, amending Directive 2008/96/EC on Road Infrastructure Safety Management. The changes aimed to establish and implement new procedures and tools for the following actions during the road lifecycle:

- **RTS Impact Assessment** (at the planning or early design stages).
- **RTS Audit** (at the design stage and preparation for road opening).
- **RTS Assessment for the entire road network** (introduction of two risk assessment methods for roads: reactive and proactive).
- **RTS Inspection** (introduction of inspections specifically for particularly dangerous locations).

The scope of the assessment obligation was expanded to include not only national roads but also certain local roads. A reporting schedule was also established for the safety status of the primary road network. The first reports on RTS Assessment for the primary road network in the EU are expected to appear in 2025.

In Poland, the methods of RTS Management are currently being implemented on the national road network and selected local roads. Data on accidents stored in databases are used during the impact assessment of planned roads on safety within the network of cooperating roads to evaluate the current state and in the classification of road sections using reactive methods of assessing RTS.

In Norway, certain elements of the aforementioned Road Infrastructure Safety Management system are applied, particularly RTS Audits (TS audits) and RTS Inspections (TS inspections). The purpose of Road Safety Audits and Inspections is to ensure that new and existing road and traffic systems are designed or improved according to current requirements to prevent accidents involving road users who are killed or seriously injured. It is also important that systematic reviews of infrastructure ensure universal design and accessibility for pedestrians and cyclists.

6.2. Measurements of RTS in quantitative analyses and road network classification

6.2.1. Measures of safety risks

In studies of phenomena occurring within the RTS system, quantitative methods are typically employed, requiring the description of the studied objects in measurable terms. Reliable quantitative measures of the road transport system and its functioning are essential for enabling public authorities to undertake effective actions that meet safety objectives. Establishing precise safety goals also requires good information about those goals. Long delays in obtaining necessary data or poor data quality (high estimation uncertainty) result in low-quality information, rendering such measures less useful.

In contemporary approaches, safety risk can be assessed using various measures that account for different aspects. The list includes several dozen items,[184] which can be divided into:

- **absolute measures**,
- **relative measures,**
- **intermediate measures.**

Absolute measures of RTS are calculated based on accident data obtained from available databases or forecasts using appropriate models. In Poland, these measures include:

- Number of events (Polish: *liczba zdarzeń drogowych*, LZD), number of collisions (Polish: *liczba kolizji*, LK), number of accidents (Polish: *liczba wypadków*, LW);
- Number of accident victims: fatalities (Polish: *liczba zgonów*, LZ), injured: slightly (Polish: *liczba lekko rannych*, LLR), moderately (Polish: *liczba średnio rannych*, LSR), severely (Polish: *liczba ciężko rannych*, LCR);
- Costs of road events (Polish: *koszt zdarzeń drogowych*, KZD), costs of accidents (Polish: *koszt wypadków*, KW).

These absolute measures can be used to present the level of risk on various road objects (road network in the analysed area, roads, road sections, intersections, pedestrian crossings, etc.) during a selected analysis period (typically 3–5 years).

Costs of road events (KZD) refer to the total of all material and social costs of road accidents in the analysed area over a specified period. These include financial losses borne by road users or society due to personal and material losses resulting from road events, such as: rescue operation costs, medical treatment costs, pensions, loss of income, loss of production, loss of consumption, etc. The costs of road accidents are estimated according to a developed methodology[185] and are used to assess the external costs of transport activities in the analysed area and to raise awareness of the magnitude of losses incurred in road accidents, as well as to select road projects for implementation. Costs of road events (KZD) represent a synthetic quantitative measure of RTS.

[184] K. Jamroz, *Metoda zarządzania ryzykiem…*
[185] *Niebieska Księga. Infrastruktura drogowa. Wydanie uaktualnione*, JASPERS 2023.

Relative measures of RTS are calculated as safety indicators (characterizing different aspects of safety) understood as the ratio of general (direct) measures to selected measures characterizing the transport system or socio-economic system of the analysed area (road object). To standardize terminology and RTS measures, several groups of RTS indicators have been adopted:

- Functional: demographic, automotive, economic, infrastructural, transport;
- Structural.

In Poland, the most commonly used measures are demographic indicators (referencing the population), such as the demographic fatality rate (Polish: *wskaźnik gęstości demograficznej*, WZ; fatalities / 1 million inhabitants), infrastructural indicators (referencing road length), such as the density of fatalities (Polish: *gęstość ofiar śmiertelnych,* GZ; fatalities/km), and transport indicators (referencing transport work performed by vehicles in the analysed area), such as the concentration of fatalities (Polish: *koncentracja ofiar śmiertelnych*, KZ; fatalities / 1 million passenger-kilometres). In Norway, an additional automotive indicator is used, which considers the number of vehicles in the analysed area, e.g., fatalities/10 thousand vehicles.

Relative, structural measures of RTS present the consequences of accidents, such as the fatality rate (Polish: *śmiertelność ofiar wypadków*, SO) or the severity of accidents (Polish: *ciężkość wypadków*, CW). These measures are used to classify and assess the level of safety threat on the road network.

Intermediate measures are various safety indicators that allow for the assessment of different aspects of safety on the one hand, and on the other hand, the selection of measures for which the most reliable data are available. Example intermediate RTS measures describing road user behaviour include:

- vehicle drivers: those driving at excessive speed (Polish: *jadący z niedozwoloną prędkością*, UVP), entering intersections on a red light (Polish: *wjeżdżający na skrzyżowanie przy czerwonym świetle*, UCK), under the influence of alcohol (Polish: *będący pod wpływem alkoholu*, UA), not using safety measures (seat belts, helmets) (Polish: *nie stosujący zabezpieczeń*, UBP), using mobile phones while driving (Polish: *używający telefonów komórkowych w czasie jazdy*, UTK);
- pedestrians: those crossing at a red light (Polish: *wchodzący na przejście przy czerwonym świetle*, UCP), without reflective materials (Polish: *bez materiałów odblaskowych*, UBO).

A significant group of intermediate measures also includes traffic conflicts and their parameters. Intermediate safety measures are used to assess the level of safety threat at specific road objects (intersections, pedestrian crossings, etc.) without waiting for recorded road accidents. These measures are also used to evaluate the effectiveness and efficiency of implemented actions and improvements.

6.2.2. Evaluation and classification of safety threats on the road network

Management of Road Infrastructure Safety. An organized safety management system is crucial for the effective functioning of RTS. One element of this system is the Road Infrastructure Safety Management (RISM).[186] It is a multi-stage procedure aimed at improving safety on the operational road network, involving:

- Assessment of safety conditions and identification of the most hazardous sections of the analysed roads,
- Conducting detailed RTS inspections on the most hazardous sections,
- Selecting the most effective and efficient corrective actions in accordance with available financial resources,
- Communicating the hazards to road users and partners (local governments, Police, cooperating companies),
- Monitoring the safety level after implementing the planned actions and evaluating their effectiveness.

RISM, along with the road safety inspection (RSI), complements the management of RTS in so-called "black spots" in many countries. The first step in this procedure is identifying and prioritizing sections with the highest risk to road users on one hand and sections with the greatest potential for reducing accident costs on the other. The presented method allows for selecting from the entire network of analysed roads those sections where infrastructure improvements or other actions will achieve the greatest effectiveness and efficiency.

Two approaches based on identification can be distinguished: "black spots" and "black sections." The first approach to managing road network safety is primarily used in Norway, Ireland, and many other countries. The second approach is used in Germany, France, Denmark, and many countries involved in the EuroRAP, AusRAP, USARAP, iRAP programs (approximately 70 countries).

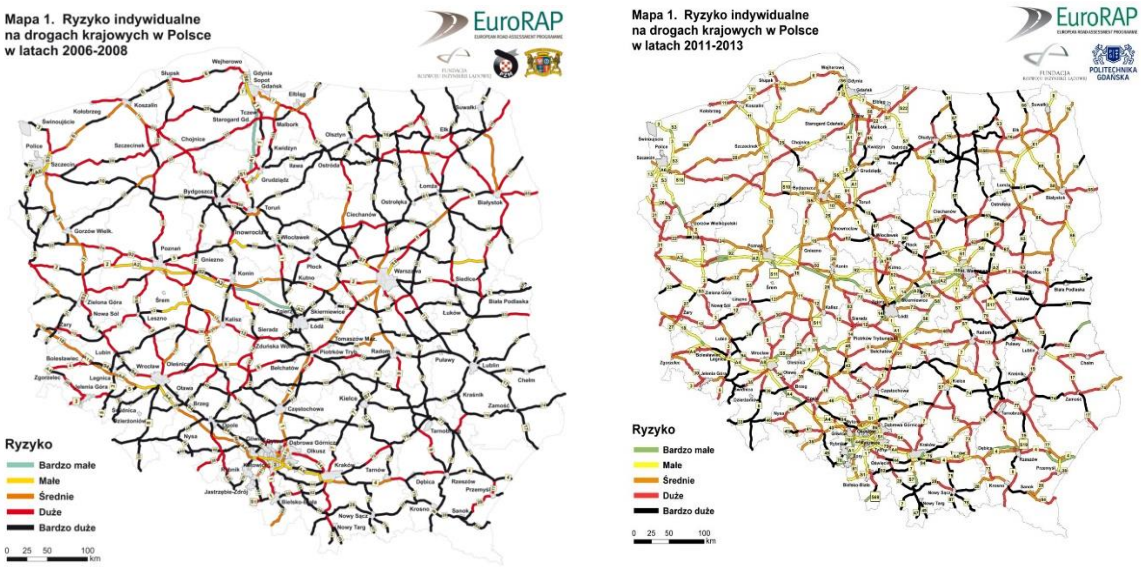
Risk classification methods used in Poland. Risk classification of safety hazards on road networks and streets is based on a risk methodology. Risk classification is one of the stages of risk management in road engineering.[187]

In Poland, work on implementing risk classification began in 2007-2008 as part of the BRD GAMBIT National Roads Program (GDDKiA, PK, PG) and in collaboration with the EuroRAP organization.[188] From 2011-2013, under the commission of GDDKiA, guidelines for conducting risk classification on national roads were developed. In 2015, a method for classifying dangerous sections for the TEN-T road network was formulated, meeting the requirements of Directive 2008/96/EC. Risk assessment was conducted for selected measures of social risk (severity of accidents, potential for accident reduction) and individual risk (concentration of serious accidents, concentration of accident costs). For each measure, threshold values were set for 5 classes of safety risk levels (risk classes A–E). Using the established classifications, risk assessments were performed on the national road network (commissioned by GDDKiA), regional road network (commissioned by the KRBRD

[186] Directive 2008/96/EC of the European Parliament and of the Council of 19 November 2008 on road infrastructure safety management.
[187] Jamroz, K. *Metoda zarządzania...*
[188] Jamroz, K., Michalski, L., & Kustra, W. *Atlas ryzyka na drogach krajowych w Polsce*. In *Drogownictwo*, No. 4/2010.

Secretariat), and selected cities (ZDM Warsaw). The comparison of risk levels on the national road network in Poland (with over 75% of road sections between 2006-2008 exhibiting high or very high levels of serious accident risk compared to other European countries) indicated directions for the development of the road network and improvements in safety standards. The development of the road network and improvement of RTS standards have led to a significant increase in the number of road sections with low and very low (A–B) levels of serious accident risk.

Map 1. Maps of individual risk on national roads in Poland: 2006–2008 and 2011–2013



Source: Jamroz, K., Kustra, W., et al. *Bezpieczne drogi ratują życie. Mapa ryzyka na drogach międzynarodowych*. EuroRAP, FRIL, Gdańsk, 2009; Jamroz, K., Kustra, W., et al. *Atlas ryzyka na drogach krajowych w Polsce 20011–2013*, EuroRAP, FRIL, Gdańsk 2014, www.eurorap.org.

The developed risk classification method for severe accidents (with fatalities and serious injuries) requires verification and updates by adjusting the threshold values for risk classes to the changed conditions of road network operation over the past decades and to the requirements of the new Directive 2019/1936. This Directive introduces a method for assessing RTS on road networks using reactive and proactive methods according to the methodology developed for EU needs.[189] However, this methodology, and particularly the risk classification for safety threats, requires adaptation to Polish conditions.[190] The results of the conducted risk assessments will serve as the basis for selecting road sections and intersections where detailed inspections will be carried out and improvement actions prepared.

[189] *Network Wide Road Safety Assessment. Methodology and Implementation Handbook*. National Technical University of Athens, University of Zagreb, FRED Engineering, 2023.
[190] Regulation of the Minister of Infrastructure of 28 May 2024 on the Assessment of the Risk of Accidents and the Severity of Their Consequences, and on Road Traffic Safety Categories. Dz.U. 2024 poz. 840.

Map 2. Map of individual risk on national roads in Poland (due to the concentration of fatal accidents) for 2019–2021

Source: GDDKiA.

Risk assessment methods for RTS in Norway. In 2005, Norway developed and implemented the first handbook for risk assessment and management on the road network.[191] This handbook covers various aspects of risks but primarily focuses on assessing and managing RTS risks. It was prepared to facilitate the use of risk-based methods by SV, both to create better solutions and to gain experience for method development. It discusses qualitative and quantitative risk assessment methods and a five-step risk management procedure: context definition, hazard and risk source identification, risk level assessment (qualification), risk response, and risk monitoring and communication. The handbook indicates where these methods are applicable throughout the lifecycle of a road asset, from planning to maintenance. Qualitative risk assessment methods are recommended for planning tunnels, operating existing tunnels, and conducting roadworks. Quantitative risk assessment methods (supported by computational programs) are suggested for evaluating the performance of road sections and tunnels, as well as for assessing the impact of planned investments on road safety in cooperating networks.

In Norway, systematic research is also conducted on risk estimation for different road user groups and age categories, types of injuries, days of the week, and times of the day, as well as vehicle types.[192] The risk measure is the number of specific types of accident victims per 1 million passenger kilometres. The highest risk is associated with motorcycles, mopeds, bicycles, and pedestrians, while the lowest risk is observed for car drivers and passengers. The risk distribution by gender and age within each road user group shows that young and older individuals generally face higher risks compared to middle-aged individuals and children. Over time, however, the differences between age groups have diminished. Older people are more likely than others to suffer severe injuries in accidents they are involved in and, as car drivers, are more exposed to material damage.

[191] Statens vegvesen. *Risikovurderinger i vegtrafikken. Handbok V721*. Oslo, 2005.
[192] Bjørnskau, T. *Risiko i veitrafikken 2013/14*. TØI rapport 1448/2015. Oslo, 2016.

Traditionally, the highest risk for drivers occurs at night from Monday to Sunday and from Sunday to Monday, but the difference between night and Sunday and other time periods is much smaller than before. Particularly, young drivers face lower risk at night during weekends.

Over time, risk for all road user groups and age categories has decreased, but in recent years there have been minor changes for cyclists and pedestrians. The obtained risk levels for specific categories are used to estimate the number of road accident victims for selected actions and improvements.

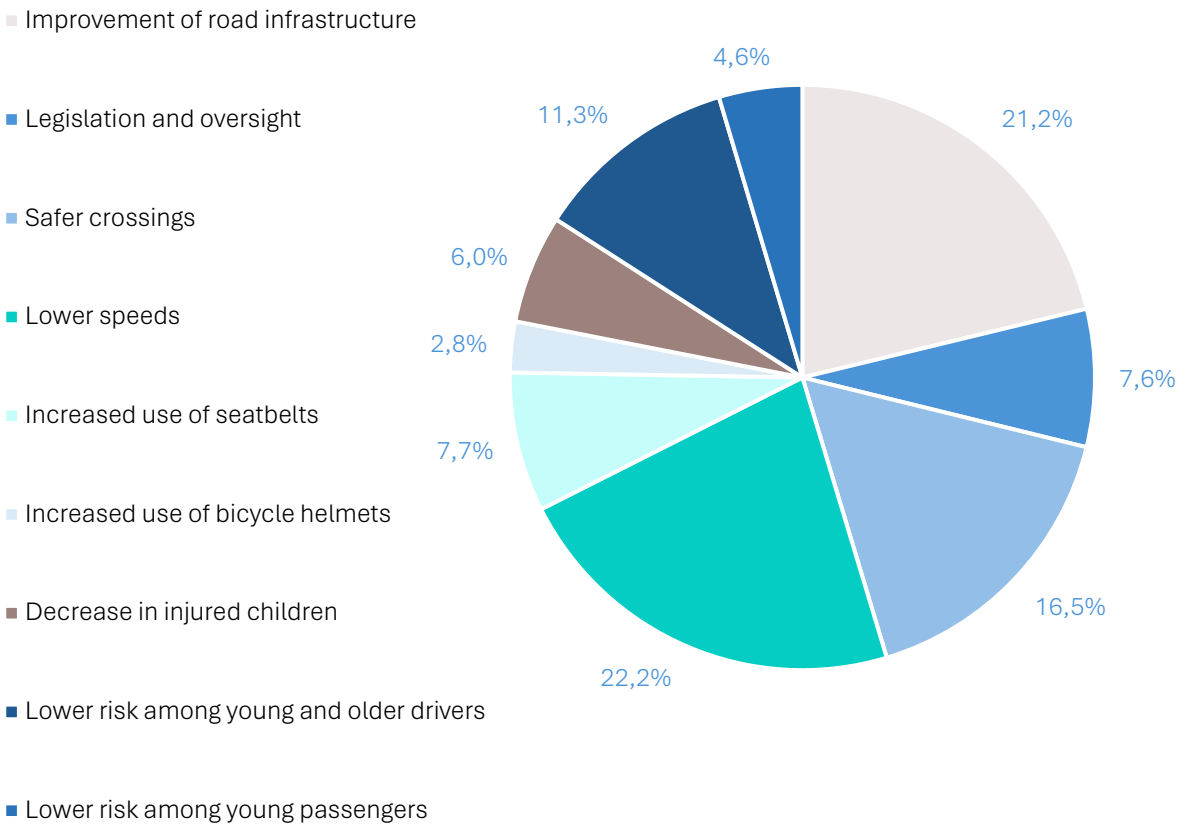
6.2.3. Assessment of effectiveness and efficiency of actions

In Norway, the effectiveness and efficiency of RTS measures and improvements are assessed using a set of nearly 150 improvements outlined in a relevant handbook.[193] In 2007, an analysis of 45 of the most effective measures was conducted, of which 39 were also economically effective.[194] The highest effectiveness in road solutions was achieved through measures such as converting standard intersections to roundabouts, improving pedestrian crossings, road lighting, and changing speed limits. In traffic supervision, the most effective measures included speed monitoring, alcohol checks, and seatbelt enforcement. Significant reductions were also expected from upgrading vehicle fleets with driver assistance systems, such as intelligent speed management. Based on these measures, four variants of action sets were developed and the expected number of fatalities and seriously injured individuals in 2020 was estimated, indicating difficulties in achieving the expected 50% reduction in fatalities and serious injuries. As a result, with the anticipated and new measures implemented, a reduction of 63% in fatalities and 54% in serious injuries was achieved during the period 2006–2020.

The report[195] identified and estimated the impact of factors (measures to improve RTS) that contributed to the decrease in the number of fatalities or serious injuries on roads in Norway from 2000 to 2019, as shown in the pie charts below. It should be noted that the presented factors explain 59% of the change in the number of fatalities or serious injuries.

[193] R. Elvik, T. Vaa, *The Handbook of Road Safety Measures*, Elsevier Science, Oxford 2004.
[194] R. Elvik, *Prospects for improving road safety in Norway*, TØI, Oslo 2007.
[195] R. Elvik R., A.K. Høye, *Hva forklarer nedgangen i antall drepte eller hardt skadde i trafikken etter 2000?*, TØI-rapport 1816/2021.

Figure 10. Impact of measures to improve RTS on the decrease in the number of fatalities or seriously injured road users in Norway (2000–2019)



Source: Elvik, R., Høye, A. K., *Hva forklarer nedgangen i antall drepte eller hardt skadde i trafikken etter 2000?*.TØI rapport 1816/2021, Oslo, 2021.

In Poland, there is a lack of manuals, catalogues, and examples of best practices supported by research that demonstrate the effectiveness and efficiency of implemented RTS measures and improvements. A few studies conducted at the request of the Secretariat of National RTS Council[196, 197] and the NCBR have estimated the effectiveness of certain pedestrian devices, road barriers, and speed management methods. However, **there is a notable absence of a systematic approach similar to that used in Norway**.

[196] Budzyński, M., et al. *Badania zachowań pieszych i relacji pieszy-kierowca wrzesień – grudzień 2018 r.* Gdańsk, 2015. PG commissioned by SKRBRD.
[197] Dąbrowska-Loranc, M., Skoczyński, P., Wacowska-Ślęzak, J., & Zielińska, A. *Badania zachowań pieszych i relacji.* Warsaw, 2018. ITS commissioned by SKRBRD.

6.3. Qualitative analysis and assessment of RTS

Qualitative analysis and assessment of RTS are used in situations where quantitative evaluation is challenging. In the context of managing road infrastructure safety (Directive 2019/1936), elements of qualitative analysis and assessment are incorporated into recommended tools, such as RTS audits and RTS inspections.

6.3.1. RTS audit

An **RTS audit** refers to an independent, detailed, systematic, and technical assessment of the safety of the design features of road infrastructure projects, covering all stages from design to the initial phase of use. The road infrastructure project audit should be conducted by a certified RTS auditor or an audit team.

The aim of the RTS audit is to eliminate from project documentation solutions that may pose a risk to the safety of all road users, and to draw greater attention to the use of safe solutions by all involved in the planning, design, construction, and maintenance of roads.

In Poland, work on implementing RTS audits began in the late 1990s (GDDKiA, PK, and PG). In 2002, the first training courses for GDDKiA employees took place (at PK, and later also at PG). Between 2009 and 2011, guidelines for conducting RTS audits on national roads were developed on behalf of GDDKiA.[198] In 2012, the principles for training and certifying RTS auditors were introduced (Regulation of Minister of Infrastructure).[199] These guidelines include checklists and principles for auditing various elements of road infrastructure. The guidelines require updates and adjustments to reflect the changed conditions of the road network over the years and new requirements.

Training courses covering the basics of RTS and the identification of errors and defects on selected projects and road objects (over 120 hours of classes) are conducted in accordance with the Regulation, systematically to this day at the Kraków University of Technology, Gdańsk University of Technology, and the University of Zielona Góra. Over the past 20 years, more than 500 RTS auditors have been trained in Poland, who evaluate investment projects on both national and local roads. The curriculum is currently being updated to meet the requirements of Directive 2019/1936.

The RTS audit is commissioned by the investor to an auditor who holds a Certificate issued by Ministry of Infrastructure upon presenting proof of completing the RTS auditor course (basic or periodic). The RTS auditor evaluates the submitted project through processes that include identifying hazards, assessing their impact on road safety, and classifying them as errors or defects, and, in some cases (e.g., at the investor's request), suggesting improvements. Errors require project changes or immediate removal. Defects should also be addressed, which can improve the quality of the project. The auditor provides a report, which the designer must respond to. Based on

[198] Jamroz, K., Kustra, W., Gaca, S., Michalski, L., et al., *Instrukcja wykonywania oceny wpływu na BRD i audytu bezpieczeństwa ruchu projektów infrastruktury drogowej na drogach krajowych. CZ. II Audyt bezpieczeństwa ruchu drogowego. Załącznik B: Metoda prowadzenia audytu BRD*, Consortium of: FRIL, PG, PK on behalf of GDDKiA, Gdańsk/Kraków, 2011.

[199] Regulation of the Minister of Transport, Construction, and Maritime Economy of 14 September 2012 on training and the template for the certificate for RTS auditors. Journal of Laws RP, No. 1079, Warsaw, 28 September 2012.

the auditor's opinion and the designer's response, the investor should decide whether to amend or retain the evaluated element.

In Norway, RTS audits are conducted in relation to the planning and implementation of all new road projects overseen by the SV (cf. Road Traffic Safety Regulations § 1 and § 4).[200] A road project RTS audit is carried out by a team of auditors led by a leader (who must meet specific requirements) and trained auditors who have passed an auditor course examination. The training and certification requirements for RTS auditors are specified in the Road Traffic Safety Regulations § 8. The RTS regulations and related guidelines specify when and where road safety audits and inspections should be conducted.

The guide (V720) describes the fundamental principles, requirements, roles, responsibilities, and processes for planning, conducting, and documenting RTS audits. It is primarily aimed at individuals directly involved in audit and inspection processes and can be applied to all types and owners of roads. Checklists may also be used for self-assessment by designers and investors.

The RTS audit is conducted at the planning and design stages of a road, just before its opening, and during the initial phase of use. At each stage, the audit leader produces a report and presents it to the client. In the first stage (planning), the audit includes verifying whether the project complies with legal requirements, regulations, standards, norms, and guidelines. In the second stage (design), the audit checks whether the physical elements meet statutory, executive, standard, norm, and guideline requirements, as well as whether previously recommended measures have been implemented. In the third stage (just before opening), the audit assesses whether the facility complies with legal requirements, regulations, standards, norms, and guidelines, and whether safety issues identified in earlier audits have been addressed. In the fourth stage (initial phase of use), the focus is on road user behaviour and conflicts related to the project, vertical and horizontal signage. An inspection of the facility is required.

6.3.2. Road Safety Inspection (RSI)

Road Safety Inspections (RSI) involve the periodic identification of features and defects on existing roads that require maintenance work for safety reasons. These inspections should be conducted by the road manager frequently enough to ensure an adequate level of safety for the infrastructure. They also include systematic checks of traffic management and safety measures at roadworks sites, as well as assessing the potential impact of roadworks on RTS.

In Poland, in 2013, guidelines for conducting RSI inspections were developed (by PG and PK) on behalf of the General Directorate for National Roads and Motorways (GDDKiA).[201] Several training courses for employees were also conducted. These guidelines include checklists and procedures for inspecting various elements of road infrastructure. The guidelines require updates and adjustments to accommodate the changes in road network conditions and new requirements over the years.

[200] Statens vegvesen. *Trafikksikkerhets- revisjoner og -inspeksjoner. Handbok V720*. Oslo, 2014.
[201] Budzyński, M., Gaca, S., Jamroz, K., Michalski, L., et al. *Instrukcja kontroli stanu bezpieczeństwa ruchu drogowego.* Gdańsk, 2013. Commissioned by GDDKiA, Gdańsk University of Technology.

Training courses (mainly for field employees of GDDKiA) continue to be conducted to this day. These courses cover the basics of RTS and the identification of deficiencies on selected road sites (approximately 30 hours of instruction). Over the past 10 years, more than 200 RTS inspectors have been trained in Poland, who assess existing roads. The training program is currently being updated to align with the requirements of Directive 2019/1936.

RTS inspections are carried out by an RTS inspector as part of their work in a road management unit (branch, district). The inspector performs general, detailed, or specialized (dedicated) inspections. They evaluate the road or road facility through processes that include identifying hazards or sources of danger on-site, assessing their impact on traffic safety, and classifying defects into one of four hazard categories (A–D). Defects classified as D should be corrected as quickly as possible. Until the correction or repair is made, temporary measures may be necessary. Defects in this category can lead to severe traffic accidents, making prompt action essential. Defects in categories B and C should be addressed through maintenance and modernization works, with priority based on the degree of irregularity, traffic volume, and location characteristics. Defects in category A are minor issues to be addressed during routine maintenance. The inspector provides a report and suggests improvements to eliminate or reduce the level of risk.

In Norway, RTS inspections (*Trafikksikkerhet*, TS) are conducted on existing roads. TS inspections can have various objectives and cover different topics. One important goal is to provide a basis for planning and establish priorities for actions. A TS inspection involves a thorough and systematic review of the road network based on road standards, guidelines, checklists, and accident data. It requires both on-site and photo inspections of the section. In addition to planned inspections, client-initiated inspections may be carried out as needed. These inspections can focus on a range of topics. For example, an inspection of an existing road may include: a particular emphasis on road surroundings and safety devices, curvature, lighting, universal design, maintenance, intersection solutions, tunnels, conditions for motorcyclists, pedestrian conditions, etc. Similarly, dedicated inspections are conducted for bicycle paths or roadwork areas. An RTS inspection is conducted by a team led by a leader who presents the report. Detailed guidelines for conducting RTS inspections are outlined in the handbook (*Handbok V721*).

6.4. Principles for monitoring the implementation of RTS programs

6.4.1. Monitoring RTS programs – general issues

The fundamental premise of developing RTS programs is to include the task of monitoring and evaluating the actions outlined in these programs. This is necessary to determine whether the planned actions are being implemented and whether they produce the expected outcomes. The results of such evaluations can influence potential modifications to the actions planned in the program. More specifically, the monitoring task involves the following:

- Performing assessments of the correctness of the assumptions made in relation to the scope of the planned activities, the methods of implementation, and the effects evaluated both quantitatively and qualitatively.

- Identifying potential barriers and threats that may limit the positive outcomes of the implemented actions. In cases where the designated effects are not achieved, a standard analysis of the causes is conducted, and corrective actions are introduced to align the implemented actions with the program's goals. It is also necessary to consider justifiable adjustments to the program's objectives and the evaluation indicators of individual actions.
- Collecting data for a more comprehensive quantitative description of the effectiveness of individual RTS improvement measures, taking into account additional influencing factors (known as explanatory variables), which are typically also recorded during the implementation period. The models of quantitative effectiveness assessments based on the collected data are an important source of knowledge for formulating recommendations regarding future applications of the evaluated measures.
- Promoting knowledge of RTS and advocating for RTS improvement programs, including increasing their social acceptance, especially for actions perceived as restrictive towards road users or those considered too costly.

Conducting monitoring of implemented RTS measures requires at least:

- Establishing tools and the scope for collecting information. Such tools may include annual reports on program implementation with a fixed document structure, prepared by institutions responsible for specific actions. These reports are submitted to the coordinating institution for further analysis. Supplementing this collected information could be periodic expert evaluations of the whole or parts of the programs conducted by independent study or research units. Additionally, information contained in periodic reports prepared as part of the statutory tasks by the units involved in program implementation can also be used in monitoring. These reports are regularly produced as they provide a knowledge base that helps establish priorities and select appropriate measures for carrying out statutory tasks, including those outlined in the RTS improvement program.
- Establishing a set of indicators that define the necessary scope of data collection and against which the assessment of the planned actions will be conducted. It is often very useful to collect additional data characterizing conditions affecting RTS during the evaluation periods and independent of the programmatic measures. For example, this might include information on changes in traffic volume and structure in the road network, demographic changes, new social behaviour trends, extreme random events, etc. Such information can be used as additional explanatory variables in models quantitatively describing the effectiveness of individual RTS actions and measures.

For readability and practical usefulness of the results from the evaluation of individual tasks in the RTS improvement program, the evaluation indicators should: be closely related to the evaluated tasks and the set general and specific objectives; focus on assessing the implementation of the main tasks; be characterized by clarity of understanding ("resistance" to arbitrary interpretation by those preparing reports); be easy to define without excessive data acquisition costs.

Detailed assessments of the effectiveness of RTS improvement measures that are widely applied but of a local nature, such as corrections to road infrastructure solutions, usually exceed the scope

of national monitoring and are the subject of separate specialized studies and analyses. Such studies and analyses may also utilize data collected through systematic monitoring, depending on their level of detail.

The above description of tools, data collection scope, and the set of evaluation indicators for planned actions should be clearly documented in the RTS improvement programs, along with the designation of the institution responsible for conducting the monitoring and disseminating its results.

In Poland, two types of reports are envisaged for monitoring the National RTS Program 2021–2030:

- **Annual reports** – providing a complete summary of information on the state of RTS and the actions and results achieved concerning the program's objectives and assumptions.
- **Three-year periodic reports** – containing a comprehensive summary of results achieved concerning the program's objectives and assumptions, as well as an evaluation of the planned priorities and directions of the program in terms of their validity and effectiveness.

It is recommended that the above reporting model also apply to comprehensive RTS programs implemented at regional and local levels[202]. In Poland, reports on the implementation of the National RTS Program 2021–2030 are prepared and disseminated by the National RTS Council.

In Norway, the implementation of actions outlined in the National Plan of Action for Road Safety is reported to the Minister of Transport. Annual reports are prepared, containing information on the outcomes of the actions taken concerning the main goal of the program, i.e., reducing the number of fatalities and serious injuries in road accidents. The structure of the reports is designed to present information on achieving or failing to achieve the established general and specific indicators assigned to the main areas of action. For some tasks, quantitative indicators are lacking, but the reporting method allows for a qualitative assessment of the contribution of each action towards achieving the main goals of the program.

6.4.2. Measures and indicators used in monitoring RTS programs

The measures and indicators used in monitoring the implementation of actions in RTS programs are selected to enable the assessment of:

- **Progress** in the implementation of the program with the achievement of interim goals (known as output indicators);
- **The actual impact** of the actions taken on the state of RTS, measured by the main objectives, i.e., the overall number of fatalities and serious injuries in road accidents.

The main indicators for achieving intermediate objectives in improving RTS are typically: number of fatalities, number of seriously injured, number of injured, number of accidents, number of fatalities per 1 million inhabitants, number of accidents per 1 million inhabitants, number of fatalities per 100 accidents, and number of accidents per 100 km of road. The assessment of achieving intermediate

[202] Narodowy Program Bezpieczeństwa Ruchu Drogowego 2021–2030.

objectives may also be conducted based on indicators other than direct data on road accidents and their victims. Each measure can be assigned one or more indicators calculated in material units related to the specifics of the given measure.

In Poland, key effectiveness indicators have been established in relation to 8 intervention areas, namely: speed, use of seat belts and child restraint systems, protective equipment (helmets for motorcyclists, moped riders, and cyclists), driving under the influence of alcohol, distraction, vehicle safety, road infrastructure, and post-accident rescue and care. This division pertains to implementation programs, including the program for 2024–2025. In the National Road Traffic Safety Program 2030 (NPBRD 2030), target values for indicators to be achieved by 2030 are specified, relating to the following action groups: safe people, safe roads, safe speed, and safe vehicles. The values of these indicators obtained in subsequent years of monitoring the program can be compared to the target values to assess whether the trends in recorded changes for individual indicators are moving towards the set target values.

In Norway, key effectiveness indicators have been established in relation to 16 intervention areas, namely: speed, use of seat belts and child restraint systems, intoxicants, distraction, protection for children (0–14 years), youth and young drivers, older road users, pedestrians and cyclists, motorcyclists and moped users, road freight transport, head-on collisions and off-road accidents, road maintenance and management, use of new technologies in road safety measures, road safety activities in private and public organisations/enterprises, and development of road safety knowledge.

This comparison shows a significant difference between Poland and Norway in terms of monitoring, implementing, and evaluating road safety measures, but there are also common elements in the monitoring systems of both countries. Shared aspects in their programs include: speed, use of seat belts and child restraint systems, pedestrians and cyclists, protective equipment (helmets for motorcyclists, moped riders, and cyclists), driving under the influence of substances (alcohol), distraction, head-on collisions and off-road accidents, and indirectly, older road users.

The table below (a full, detailed version of the table is available in the annexes – Annex 6) compares the monitoring indicators used in road safety programs in Poland and Norway. These indicators are aligned with the priorities identified in these programs. For Poland, the indicators from the National Road Traffic Safety Program 2021–2030 and the Implementation Program for 2024–2025 have been included. For Norway, the indicators from the National Plan of Action for Road Safety 2022–2025 have been compared.[203]

[203] *Nasjonal tiltaksplan for trafikksikkerhet på vei 2022–2025*.

Table 33. Presence of monitoring indicators for specific priorities/intervention areas in RTS programs in Poland and Norway

Priority/intervention area in road safety program	Poland	Norway
Speed	YES	YES
Use of seat belts and child restraint systems	YES	YES
Driving under the influence of intoxicants, including alcohol	YES	YES
Distraction	YES	YES
Protection for children (0-14 years)	NO	YES
Youth and young drivers	NO	YES
Older road users	YES	YES
Pedestrians and cyclists	YES	YES
Motorcyclists and moped users	YES	YES
Road freight transport	NO	YES
Head-on collisions and off-road accidents	YES	YES
Road maintenance and management	NO	NO
Road infrastructure	YES	NO
Vehicle safety	YES	NO
Use of new technologies	NO	NO
RTS activities in private and public organisations/enterprises	NO	YES
Rescue and post-accident care	YES	NO
Knowledge base on RTS	NO	No quantitative indicators, qualitative assessment measures formulated.

Source: own elaboration based on*: Nasjonal tiltaksplan for trafikksikkerhet på vei 2022–2025, Narodowy Program Bezpieczeństwa Ruchu drogowego 2021–2030, Program realizacyjny na lata 2024-2025* for *Narodowy Program Bezpieczeństwa Ruchu Drogowego 2021-2030*.

The comparison of indicators presented in the table shows that, in Poland's implementation program, there is a dominance of monitoring indicators related to the development and transformation of road infrastructure. For priorities and interventions related to influencing road user behaviour, the monitoring indicators used in Norway are more detailed than those in Poland. They also exhibit a higher degree of objectivity, clarity, and understanding in the public presentation of road safety program outcomes. However, quantitative assessment of some indicators requires additional research work, such as evaluating speed limit violations, seat belt usage, and assessing risk levels considering traffic intensity and transport work performed.

6.5. Scientific research in assessing the effectiveness of road safety measures

One of the foundations for improving RTS is evaluating the existing level of safety risks and the necessity of implementing actions based on real data and scientific research. To make the road network safer and reduce the risk of accidents, **RTS management must be grounded in scientific evidence**. Within such a management system, a set of appropriate and effective strategies, tools, and measures is developed and implemented. For selected measures to be effective, they must be assessed based on scientific research. In this context, the transfer of knowledge between countries and research centres becomes crucial and should be based on real practice in a "learning by doing" model. Therefore, strong and sustained international cooperation is essential for the proper transfer of knowledge and support tools. It should be noted that the role of scientific research in assessing the effectiveness of RTS measures varies significantly across different countries.

6.5.1. Scientific research conducted in Norway on RTS programs

In the programs and activities related to RTS conducted in Norway, following the principles of Vision Zero, a **significant emphasis is placed on analyses based on experiences and research findings**. Norway has been building knowledge bases and utilizing them in preparing actions and improvements for RTS for many years. A notable example is the globally recognized handbook by R. Elvik,[204] which summarizes current knowledge on the effects of various RTS measures. This handbook covers all areas of road safety, including: traffic control, vehicle control, driver education and training, advertising campaigns, law enforcement by the Police, post-accident care, legislation and enforcement regarding driving "under the influence," traffic management, and general safety policy instruments.

With the initiation of a systematic approach to RTS actions, the scope of research has also been strengthened. One of the early research directions focused on the effectiveness of law enforcement methods by the Police and their impact on road safety.[205] Experiments and analyses revealed that increasing the number of controlled drivers by approximately 14 times could reduce the number of fatal road accidents by up to 35%, demonstrating the significant role of traffic supervision. There was also an analysis of the potential for changing priorities among different road enforcement goals. The main enforcement goals in Norway are: (1) speed, (2) driving under the influence of alcohol, (3) driving under the influence of drugs, (4) seatbelt use, (5) other offenses, including the use of handheld mobile phones, and (6) vehicle condition, which accounts for about 83% of Police activities. It was found that without increasing the overall number of controls, changes in the proportions between individual goals are unrealistic and would not significantly impact road safety improvement. However, increasing the number of controls and the level of enforcement could greatly influence safety and is economically beneficial. Therefore, there was a recognized need to study the factors influencing how the Police set priorities within various duties and how to influence these factors to ensure optimal use of Police resources with maximum societal benefits. A correct approach would be to conduct a cost-benefit analysis for all types of Police activities. It cannot be

[204] Elvik, R., Vaa, T., et al. *The Handbook of Road Safety Measures: Second Edition*. Emerald Group Publishing, 2009.
[205] Elvik, R., et al. 'Assessing the Efficiency of Priorities for Traffic Law Enforcement in Norway.' *Accident Analysis and Prevention*, vol. 47, 2012, pp. 146–152.

ruled out that intensifying other Police activities might yield greater benefits than increasing traffic law enforcement. Based on the conducted research and analyses, the following conclusions were drawn:

1. The current level of law enforcement is sufficient to maintain a deterrent effect against driving under the influence of alcohol and not using seatbelts; however, it is not sufficient to prevent widespread speeding, as nearly 50% of drivers violated speed limits, and the rate of speeding violations has been increasing over time.
2. The impact of law enforcement on accidents, fatalities, and injuries can be maximized by targeting enforcement on those offenses that most contribute to accidents, fatalities, and injuries. In this context, enforcement of speed limit violations currently has too low a priority.

In studies of the impact of various factors on accidents involving fatalities and serious injuries, in-depth data collected by Accident Analysis Groups (UAG) is used. The current National Transport Plan 2022–2033[206] includes the need to build a knowledge base in the following five areas: the operation and maintenance of the existing road network, urban areas, road projects, user behaviours, and vehicle technology. Additionally, the national RTS program 2022–2025[207] anticipates the development of a knowledge base concerning: the collection and use of accident data, risk assessment methods, the behaviour and attitudes of road users, and the impact of selected factors on RTS. To support the implementation of the national RTS program for 2022–2025, a dedicated research and development program titled "Road Safety – Towards Vision Zero 2022-2025" has been launched, funded by SV (Action 156 in the program), along with several initiatives requiring scientific support. The new knowledge will expand the essential areas of knowledge required for the implementation of the NTP plan and facilitate the execution of the current and future RTS programs.

Among the above-mentioned areas and issues, the following require investigation, including:

1. Redistribution of financial allocations for the operation and maintenance of infrastructure, considering the structure of transport users, e.g. increasing the use of bicycles, public transport, and pedestrian traffic in urban areas.

2. Development of micromobility and its impact on RTS, in order to make informed decisions regarding changes, primarily in road traffic regulations and the use of these modes of transport.

3. Analysis of the potential changes to geometric road design regulations to reduce costs while maintaining high RTS standards. This requires examining the need for changes in design standards resulting from advancements in vehicle technology, the introduction of more driver assistance systems, and a reduction in driver errors.

4. Evaluation of road user behaviour and its impact on RTS resulting from educational activities in preschools and schools, campaigns, and actions aimed at changing the behaviour of high-risk road users (e.g., vehicle replacement and automation, the introduction of driver assistance systems, an aging population, and increased demand for transport services).

[206] *Norwegian Ministry of Transport: National Transport Plan 2022–2033. Meld. St. 20 (2020–2021) Report to the Starting (white paper).*
[207] Statens vegvesen. *National Plan of Action for Road Safety 2022-2025. 0 fatalities and serve injures. Towards Vision Zero.* Oslo, 2022.

This requires incorporating other disciplines (such as neurology, pedagogy, and psychology) into studies on road user behaviour.

5. Assessment of the impact of modern vehicle fleets (driver assistance systems) to stimulate increased vehicle turnover if necessary. This evaluation should be based on literature reviews, data from the UAG database, and the transfer of international knowledge to Norwegian conditions.

6. Improvement and development of the system for collecting and utilizing accident data by:
    - Enhancing the system for collecting, coding, and transmitting accident data reported by the Police to SV (Action No. 157).
    - Participating in a research project assessing the possibility of integrating data on injuries from road accidents contained in health service databases, to conduct more accurate analyses and broader use of accident data. It is estimated that in Norway, only about 30-40% of severely injured road accident victims are recorded (approximately 600 annually), whereas analysis of health service databases suggests that such victims may number 1,500-2,000 annually (Action No. 158).
    - Verification of accident victim classification using the International Classification of Injury Severity AIS (Action No. 159).
    - Migration of the resulting part of the database to a new technological platform, along with measures to improve data quality and security.
    - Development of the Accident Analysis Group (UAG) at SV, including preparing various thematic analyses to better understand the evolution of accidents, their causes, and consequences;
    - Investing in solutions to simplify the collection, processing, storage, and sharing of data from accident investigations with various target groups, while meeting privacy requirements.
    - Increasing the efficiency of data sharing and enabling the use of data from other systems for more extensive analyses (Action No. 160).

7. Updating and developing methods for analysing and estimating the risk of hazards and costs associated with road accidents to evaluate and select optimal RTS measures and improvements necessary for the implementation of RTS programmes, through the updating and development of:
    - Models and tools for estimating the risk level of hazards and the magnitude of losses occurring on homogeneous sections of national and county roads.
    - Tools for estimating the risk level and cost of losses incurred over longer stretches of roads, i.e., aggregated results from calculations of several consecutive homogeneous sections of national and county roads.
    - Tools for estimating the impact of implemented RTS measures on reducing the number of fatalities and severe injuries, along with updating the Norwegian RTS handbook.

6.5.2. Scientific research conducted in Poland on RTS programs

In Poland, alongside the development and implementation of national and regional RTS programmes, there has been a lack of understanding of the factors influencing the magnitude and changes in road safety metrics, as well as a deficiency in many tools that required scientific support for their development. Therefore, during the implementation of various RTS programmes, numerous research activities were conducted, undertaken individually by researchers from universities and research institutes, within national and international research projects.[208] [209] Notable research efforts include:

1. **Systematic nationwide studies of road user behaviour conducted from 2002 to 2007**[210] **and continued in subsequent periods,**[211] which were among the first monitoring studies in Poland. Initial results indicated that approximately 50% of drivers exceeded speed limits on roads, around 90% of drivers exceeded limits on roads passing through small towns, and 40% of drivers and front seat passengers, and 60% of rear seat passengers, did not use seat belts. The findings were used to develop models of the relationship between vehicle speed factors and road accident risk,[212] to intensify informational, training, and traffic supervision activities, and most importantly, to begin the development of the CANARD automatic traffic monitoring system.[213]
2. **Studies on significant human, technical, and organisational factors and their impact on the level of road accident risk across the road network in Poland.** These studies were conducted in relation to national areas, voivodeships, and sections of national and voivodeship roads. Notable examples include:
    - **Studies on factors using databases available for 60 countries with varying levels of road safety.** These studies estimated the losses incurred in road accidents (number of fatalities, accident costs) within a specified time period (usually annual), which could result from hazardous events caused by faulty operation of the road transport system. A set of mathematical models was also developed to estimate the number of fatalities in road accidents based on GDP per capita, average number of kilometres travelled by car per person, population size, and a set of modifying factors (including levels of healthcare, education, corruption, road network density, seat belt usage, alcohol consumption, and traffic supervision, among others).[214]
    - **Research on identifying and analysing the impact of factors on the number of fatalities in accidents within voivodeships**, highlighting key factors such as: the level of social and economic development, the level of motorisation and road safety culture, the development of the road network, the nature of land use in

[208] Jamroz, K., Michalski, L., & Gaca, S. *Road Safety Programmes as an Effective Tool for Developing System-Based Road Safety Policies*, in *Journal of KONBiN*, No. 1/2006, pp. 155-160.
[209] Gaca, S., & Kieć, M. *Speed Management for Local and Regional Rural Roads*, in *Transportation Research Procedia*, No. 14/2016, pp. 4170-4179.
[210] Jamroz, K., Kustra, W., Budzyński, M., & Żukowska, J. *Pedestrian Protection, Speed Enforcement and Road Network Structure: The Key Actions for Implementing Poland's Vision Zero*, in *Transportation Research Procedia*, No. 14/2016, pp. 3905-3914
[211] Jamroz, K., Budzyński, M., Kustra, W., Michalski, L., & Gaca, S. *Tools for Road Infrastructure Safety Management – Polish Experiences*, in *Transportation Research Procedia*, No. 3/2014, pp. 730-739.
[212] Gaca, S. *Badania prędkości pojazdów i jej wpływu na bezpieczeństwo ruchu drogowego*, in *Zeszyty Naukowe. Inżynieria Lądowa / Politechnika Krakowska*, Kraków, 2002.
[213] Jamroz, K., Gaca, S., Dąbrowska-Loranc, M., et al. *GAMBIT 2005. National Road Safety Programme 2005–2013*, National RTS Council, Warsaw, 2005.
[214] Jamroz, K. *Metoda zarządzania ryzykiem...*

the region, the standard of living and healthcare in the voivodeship expressed in life expectancy, the density of expressways and motorways, and the amount of funds allocated for the development of voivodeship roads.[215]

- **Assessment of safety levels on long sections of national and voivodeship roads, forming the basis for strategic management of the existing and planned road network.** Studies conducted on the national road network have shown that factors significantly affecting RTS include: cross-section and road class, length of the section, traffic volume, location, proportion of heavy goods vehicles, presence of built-up areas, density of interchanges, entrances and exits at interchanges, and intersections.[216]
- **Research on the impact of road infrastructure on night-time accident risk on voivodeship roads.** Factors affecting the occurrence of night-time accidents include the density of: access points, bus stops with lay-bys, pedestrian crossings, and point obstacles. Additionally, on sections within built-up areas, the lack of traffic calming measures significantly increases the number of accidents. Outside built-up areas, the most influential infrastructure element on night-time RTS is intersections.[217]

3. **Development of long-term forecasting methods for the number of fatalities nationwide, as well as the number of accidents and casualties in voivodeships and across the road network,** which included:
   - **Development of models that are simplified and accessible for selected user groups, resulting in a method for estimating accepted measures of social risk.** This method allows for the forecasting of road traffic fatalities based on demographic and economic factors, both nationally and regionally.[218] Adopting this concept facilitated understanding the mechanisms of the RTS system.
   - **Development of methods for forecasting the number of accidents and casualties on long sections of national roads**, depending on factors such as: road type and cross-section, traffic volume, proportion of heavy goods vehicles, forecast year, location, road section characteristics, surrounding environment, and density of interchanges and intersections.[219] This method has been adopted by GDDKiA and CUPT for evaluating and selecting investment projects for planned and designed roads.
4. **Development of a method for classifying road sections based on RTS** to identify the most hazardous sections of national and local roads, and to inform the public (using risk maps) about the level of risks.[220, 221]

[215] Wachnicka, J. *Modelowanie miar ryzyka na sieci dróg w regionach*. Doctoral Dissertation, Politechnika Gdańska, Gdańsk, 2017.
[216] Kustra, W. *Modelowanie wybranych miar bezpieczeństwa ruchu na długich odcinkach dróg. Doctoral Dissertation*, Politechnika Gdańska, Gdańsk, 2016.
[217] Zielenkiewicz, A. *Wpływ nocnych ograniczeń widoczności na bezpieczeństwo i wybrane parametry ruchu drogowego. Doctoral dissertation*, Kraków University of Technology, Kraków, 2013
[218] Jamroz, K., Smolarek, L. *Road Safety Management Tools for Country Strategic Level*, 16th RS4C Conference. DiVA, Beijing, China, 15–17 May 2013.
[219] Jamroz, K., Kustra, W., Gaca, S., Michalski, L., et al. *Instrukcja wykonywania oceny wpływu na BRD i audytu bezpieczeństwa ruchu projektów infrastruktury drogowej na drogach krajowych. Cz. I: Ocena Wpływu na Bezpieczeństwo Ruchu Drogowego. Załącznik A: Metoda oceny wpływu projektów infrastruktury drogowej na bezpieczeństwo ruchu drogowego*. Consortium: FRIL, PG, PK for GDDKiA, Gdańsk/Kraków, 2011.
[220] Jamroz, K., Kustra, W., et al. *Metodologia klasyfikacji ryzyka dla wybranych rodzajów wypadków drogowych na drogach wojewódzkich oraz dla obszarów województw i powiatów wraz z dokonaniem klasyfikacji i przedstawieniem wyników na mapach*. FRIL, PG for SKRBRD, Gdańsk, 2016.
[221] Kustra, W., Jamroz, K., et al. *Atlas ryzyka na drogach krajowych w Polsce 2008-2010*. FRIL, PG, PZMot, Gdańsk, 2011.

5. **Evaluation of the effectiveness and methods for selecting effective RTS measures, which have been the subject of a limited number of studies with a narrow scope, and which were not conducted systematically.** Among the few systematically conducted studies are those on the impact of traffic enforcement, carried out both empirically and through simulations. The results of studies at sites where speed cameras were installed, conducted using a before-and-after method, indicated a high effectiveness of the installed devices. The use of over 1,000 speed cameras would contribute to a reduction in fatalities by approximately 30%. This effectiveness was confirmed by local studies conducted by research units. These studies preceded the development of the monitoring system within the CANARD centre.
6. **Research on road user behaviour**, which included, among other things, the development of concepts and methodologies for studying selected road user behaviours (drivers, passengers, and pedestrians) and their implementation across the road network in Poland, along with recommendations for implementation.[222] Based on this, a pedestrian protection manual[223] was developed, and a series of studies were conducted on the behaviours of selected groups of pedestrians and drivers, as well as the effectiveness of selected road safety measures, in 2015[224] and 2018[225]. As a result of these studies, high-risk behaviours related to road traffic accidents were identified, and changes in certain behaviours of drivers and passengers (such as seatbelt use and mobile phone use) were outlined, as well as investigations into the interactions between vehicle drivers and pedestrians.
7. **The development of accident databases** occurred alongside the establishment of the **National RTS Observatory**,[226] located and developed at the Motor Transport Institute, which is widely used by local authorities to assess the state of road safety within their areas of operation.
8. **Development of a method for estimating the costs of road accidents for the purpose of evaluating and selecting investment projects by the CUPT**.
9. **Launch of the Road Innovation Development (Polish: *Rozwój Innowacji Drogowych*, RID)** research programme, which was implemented from 2015 to 2019 by NCBR and GDDKiA. Among the 15 research projects, 7 were dedicated to road safety issues such as: the design and maintenance of road safety barriers, 2+1 road cross-sections, the impact of road advertising on road safety, speed management, the impact of ITS methods on road safety on motorways, and the use of non-standard road signage. The results of these projects are currently being implemented into project practice.[227, 228, 229]

In addition to the aforementioned actions, attention should also be paid to the following issues:

[222] Jamroz, K., Gaca, S., et al. *Opracowanie metodologii badań i koncepcji systemu monitorowania wybranych zachowań uczestników ruchu drogowego na sieci dróg w Polsce wraz z przedstawieniem rekomendacji wdrożeniowych*. FRIL, PG, PK for SKRBRD, Gdańsk/Kraków, 2013.
[223] Jamroz, K., Mackun, T., Gaca, S., et al. *Ochrona pieszych. Podręcznik dla organizatora ruchu pieszego*. SKRBRD, Warsaw, 2014.
[224] Budzyński, M., et al. *Badania zachowań pieszych i relacji pieszy-kierowca. Wrzesień – grudzień 2018 r.*, PG on behalf of SKRBRD, Gdańsk, 2015.
[225] Dąbrowska-Loranc, M., Skoczyński, P., Wacowska-Ślęzak, J., Zielińska, A. *Badania zachowań pieszych i relacji*, ITS on behalf of SKRBRD, Warsaw, 2018.
[226] Zielińska, A., Dąbrowska-Loranc, M., Skoczyński, P. *Polskie obserwatorium bezpieczeństwa ruchu drogowego, jako jednostka wspierająca zarządzanie bezpieczeństwem transportu drogowego*, [in:] *Prace Naukowe Politechniki Warszawskiej. Transport*, Warsaw, 2016.
[227] Gaca, S., Pogodzinska, S., Wontorczyk, A. *Study of effectiveness of experimental marking and signs in speed management*, MATEC Web of Conferences, 2018.
[228] Jamroz, K., Gobis, A., Kristowski, A., Grzyl, B. *Proposed method for estimating the costs of safety barrier life cycle*, MATEC Web of Conferences, 2018.
[229] Oskarbski, J., Gumińska, L., Marcinkowski, T., et al. *Methodology of research on the impact of ITS services on the safety and efficiency of road traffic using transport models*, MATEC Web of Conferences, 2018.

1. **Establishment of committees for fatal accidents.** Since 2018, Provincial Police Commands have been appointing local expert groups (police officers, road engineers, paramedics, RTS auditors, etc.) to assess the causes of fatal accidents on roads within a given voivodeship. Unfortunately, the results of these assessments are used locally, are not aggregated, and general conclusions are not drawn for road managers, vehicle manufacturers, or lawmakers.
2. **International cooperation,** which has led to increased activity of Polish experts on the international stage and the transfer of knowledge from countries with high levels of road safety. Significant benefits for improving RTS in Poland have resulted from the country's accession to the European Union in 2004 and the associated obligations and benefits.
3. **Promoting research findings at both national and international conferences.** The results of conducted research are published in journals and presented at scientific conferences abroad and domestically. The International Road Safety Conference GAMBIT is organized every two years by Gdańsk University of Technology, while the Road Safety Congress is held annually in Kraków under the auspices of the Kraków University of Technology.

In the *National Plan of Action for Road Safety 2022-2025*, the role of scientific research is marginal and limited to *"optimising the research system and knowledge transfer in road safety and ensuring expert support."* No specific research needs supporting the Programme's implementation have been identified. The Programme's creators do not see a need for scientific support for the actions outlined, including for already developed methods and tools, or their updating.

7

Polish and Norwegian police competencies in RTS activities

7..Polish and Norwegian police competencies in RTS activities

7.1. Legal issues

The statutory competencies of the Norwegian National Road Policing Service (*Utrykningspolitiet*, UP) include:

- Promoting RTS.
- Combating road crime and providing assistance and readiness for crisis situations.
- Handling traffic offences.
- Developing new methods and materials for road safety.

It is clear that the tasks of the Norwegian UP overlap with those of the Polish Traffic Departments of County (Municipal) Police Headquarters, the Traffic Departments of Voivodeship Police Headquarters, and the Road Traffic Office at the General Police Headquarters.[230]

The primary role of the UP is to enforce traffic regulations and maintain road safety on public roads, including immediate response and arrival at accident scenes. However, it is important to recall— as mentioned in the section on the structure of road administration in Norway—that detailed investigations into road traffic accidents, especially those with serious or fatal injuries, are usually conducted by the local police district in coordination with the SV. These investigations may include forensic analysis, accident reconstruction, technical expertise, and determining the causes and responsibilities for the traffic accident.

The UP focuses its activities on the following areas:

- Non-compliance with road signs and signals by road users.
- Aggressive behaviour by road users.
- Excessive speed.
- Driving under the influence of alcohol.
- Driving under the influence of drugs.
- Failure to wear seat belts.
- Failure to adhere to the prohibition of mobile phone use while driving.
- Rules for using quads and electric scooters.
- Imposing fines for traffic offences.
- Participation in the Automated Traffic Control (ATC) system.
- Identification of criminals using public roads.
- Responding to incidents and random events in road traffic.

[230] See: § 6 section 1 point 6 of the Order No. 2 of the Chief Police Commander dated April 1, 2016 (Official Journal of the Police Headquarters 2016.13; as amended from February 15, 2024).

7.2. Actions of the Polish and Norwegian police resulting from RTS programs

Considering the scope of duties imposed on the police by laws and regulations in both the Polish and Norwegian national road safety programs, key actions for the police are identified. Most of these actions are similar, which stems from the competencies of the Polish and Norwegian police according to legal provisions. It can be observed that despite the greater number of tasks assigned to the Norwegian police in the program, its scope of activity is narrower compared to the Polish police and primarily focuses on control and supervision tasks as well as preventive actions. The tasks related to interventions at road incident sites and gathering information for databases on these incidents are similar for both the police in Poland and Norway, though the detailed scope of these activities differs slightly between the two countries.

Among the actions taken by the Polish Police for road safety, resulting from the implementation of the National RTS Program (NPBRD), the following should be highlighted:

- Intensification of police supervision in areas with high pedestrian risk.
- Intensification of police supervision regarding speeding.
- Implementation of tasks in the control and oversight area.
- Preventive actions for road safety.
- Technical strengthening of the traffic police service.
- Analysis of statistical data related to road traffic incidents.
- International cooperation in the field of road safety.
- Other activities within intersectoral actions.

The specific tasks corresponding to the general actions described above are elaborated on in section 8.2.5 regarding supervision and control and oversight tasks. For the remaining actions, the detailed tasks outlined in the NPBRD include:

- Preventive actions for road safety: Coordination and management of nationwide preventive activities aimed at protecting public safety and order in road traffic; raising public awareness about road safety, fostering proper attitudes and behaviours among road users, and building a sense of shared responsibility for one's own and others' safety on the road.
- Initiatives based on identified traffic safety threats, such as preventive actions: "Safe Holidays," "On the Road – Look and Listen," "Safe Riding to the Destination," "Safe Summer Holidays," "Safe Way to School," "Be a Role Model – Wear Reflectors," "Your Lights – Our Safety."
- Promotion of actions: "Safe Driver Day," "Drive Safely with Yanosik," "Road Safety – Be Responsible," "World Day of Remembrance for Road Traffic Victims."
- Coordination of the pilot competition titled "Reflective School."
- Co-organization of national road safety tournaments.
- Technical enhancement of the traffic police service by equipping traffic officers with vehicles and specialized equipment: vehicles for road supervision and vehicle technical condition control, laser speed meters with image recording, outfits for motorcyclists.

- **Analysis of statistical data on road traffic incidents.**
- **General and thematic analyses of safety** conducted periodically and ad-hoc.
- **Safety analyses conducted for the implementation of police programs** concerning pedestrian, cyclist, and motorcyclist safety.
- **Work on adapting the registry of drivers** who violate traffic regulations to new regulations.
- **International cooperation in road safety**: Actions resulting from membership in the ROADPOL; cooperation within the European Union and with countries that are parties to EU agreements and treaties; exchange of experiences with international institutions.
- **Other activities within intersectoral actions.**
- **Implementation of solutions** aimed at improving order and road safety through legislative changes.
- **Traffic control actions carried out by the Border Guard.**
- **Collaboration in road safety efforts** with partners such as the GDDKiA and local road authorities, Fire Brigades, Municipal Guards, Border Guard, public administration bodies, and public and emergency services.

Among the actions undertaken by the **Norwegian Police** in support of road safety, as outlined in the National Plan of Action for Road Safety 2022-2025, the following should be highlighted::

- **Actions related to speed:** analysis of speed data in collaboration with SV and actions related to speed control; analysis and selection of locations for automatic speed control (ATC) in collaboration with SV; development of a comprehensive strategy and implementation of further actions for the effective use of the ATC system in cooperation with SV; streamlining the system for handling ATC-related cases, including the development of a digital system for sending and receiving fines.
- **Actions related to driving under the influence of alcohol or drugs**: conducting preliminary sobriety tests for all drivers stopped during road checks; introducing stricter procedures for testing all drivers involved in accidents for alcohol or drugs; participating with municipalities in campaigns against driving under the influence of alcohol (at least twice a year); introducing new procedures to ensure systematic educational meetings with advice for drivers in a state of intoxication, e.g., on how to avoid repeat offenses of driving under the influence.
- **Actions related to the use of seat belts and child safety seats**: conducting biannual inspections of child protection in collaboration with *Trygg Trafikk*.
- **Actions related to driver distraction**: conducting checks on driver distraction, with a particular focus on the use of mobile phones.
- **Actions related to young drivers:** actively working on road safety for high school graduates in collaboration with local authorities and *Trygg Trafikk*; conducting and evaluating a pilot program for young drivers who have lost their licenses, in cooperation with *Trygg Trafikk*, SV, and the Norwegian prison service.
- **Actions related to road freight transport**: continuing joint inspection activities in regional intersectoral cooperation groups with SV, the Norwegian Labour Inspection Authority, the Norwegian Customs Agency, and the Norwegian Tax Administration.
- **Actions related to strengthening the knowledge base**: developing revised guidelines for police reporting of road traffic accidents to ensure high-quality information for road safety

work, and electronic data transfer from the police to road administration authorities, in collaboration with SV.

- **Actions related to traffic supervision**: monitoring driver behaviour in accordance with Article 34 of the Road Traffic Act and controlling driving licenses.

7.3. Detailed actions taken by the Polish police in RTS

In fulfilling the requirements of the road safety program, the Polish Police undertake a range of activities to improve road safety across multiple areas simultaneously. Their organization includes:

- Nationwide control and preventive actions.
- Dedicated actions initiated centrally.
- Actions resulting from programs, plans, etc.
- Actions commissioned by authorized entities.
- Own initiatives undertaken by county/town police headquarters or imposed by the Voivodeship Police Headquarters / Warsaw Police Headquarters.
- Ongoing activities conducted during daily service.

Traffic police activities are cohesive, coordinated nationwide, and focus on areas with the highest risk. Key tasks of traffic officers include detecting crimes and offenses that are major causes of accidents (e.g., speeding, improper overtaking, failure to yield), removing intoxicated drivers from the roads, handling traffic incidents, providing escorts, inspecting vehicle technical conditions, controlling road transport, and directing traffic.

The detailed scope of tasks/powers performed by traffic police officers is defined in Article 129 of the Road Traffic Law and in Order No. 30 of the Chief Commander of Police regarding service on roads.

The implementation of road traffic police activities is also based on internal planning documents, which include:

- *Priorytety i zadania priorytetowe Komendanta Głównego Policji na lata 2021-2025* (Priorities and Priority Tasks of the Chief Commandant of Police for 2021-2025);
- *Krajowy Program działań kontrolno-prewencyjnych na rzecz bezpieczeństwa ruchu drogowego na lata 2021-2023* (National Program of Control and Preventive Actions for Road Traffic Safety for 2021-2023);
- *Krajowy Program działań Policji na rzecz bezpieczeństwa pieszych na lata 2021–2023* (National Program of Police Actions for Pedestrian Safety for 2021–2023);
- *Krajowy Program działań Policji na rzecz bezpieczeństwa rowerzystów na lata 2021–2023* (National Program of Police Actions for Cyclist Safety for 2021–2023);
- *Krajowy Program działań Policji na rzecz bezpieczeństwa motocyklistów na lata 2021–2023* (National Program of Police Actions for Motorcyclist Safety for 2021–2023);
- *Krajowy Program działań profilaktycznych na rok 2021 koordynowanych przez Biuro Ruchu Drogowego KGP* (National Program of Preventive Actions for 2021 Coordinated by the Road Traffic Office of the National Police Headquarters).

It is important to emphasize the variation in the implementation of road traffic safety tasks depending on the level of the police unit, i.e., executive level (county and municipal police headquarters), supervisory level (voivodeship police headquarters / national police headquarters), and organizational-coordinating level (national police headquarters). Below is a sample overview of selected road traffic safety issues addressed at the level of the National Police Headquarters (KGP):

- **Analytical Area:** Ongoing analyses of RTS status, including selected issues; annual publications on traffic accidents in Poland; improving the process of collecting data on traffic incidents (eKZD); analysis of the effectiveness of traffic police services.
- **Legislative Area:** Initiating proposals for changes in regulations, analysing regulations requiring amendments, participating in parliamentary committee meetings and other bodies, reviewing draft amendments related to road traffic, developing unified positions on ambiguous issues.
- **Service and Supervision Organization Area:** Central coordination of service, monitoring of positions and vacancies in the traffic unit, coordination of nationwide control and preventive activities, functioning of SPEED groups, implementing the requirement for inspection of fatal accident scenes, improving services for citizens – the ability to pay fines on-site with a payment card, procedures by the police and GDDKiA to alleviate long-lasting traffic jams on highways and expressways managed by GDDKiA.
- **Preventive Area:** Initiating educational and preventive projects, coordinating preventive activities conducted by Voivodeship Police Headquarters / Capital City Police Headquarters, informational and media activities, cooperation with entities to promote safe behaviour in road traffic, participation in meetings, conferences, trainings, and sessions on road traffic topics.
- **Logistical Area:** Participation in procurement processes related to purchasing equipment for traffic police officers, developing work concepts in selected areas (DBC mode), coordinating RTS projects funded by EU sources.
- **Training Area:** Organizing and coordinating selected training for traffic police officers (driving technique improvement, traffic engineering), monitoring the training status of traffic police officers.
- **IT Area:** Participation in the implementation of IT projects related to road traffic, introducing solutions for direct electronic confiscation of driving licenses by police officers on the road (since December 5, 2020), and previously vehicle registration certificates; implementing eKZD – improving data collection processes and their quality (since January 1, 2021); implementing the eMRD application – allowing direct registration of points in the registry by police officers (since May 4, 2021); working on the project titled "Application enabling access to the Electronic Transport Supervision System – SENT" for exchanging information with the SENT system via the Police Data Transmission Network; implementing the eMRD application – allowing direct point registration in the registry by CANARD GITD.
- **International Cooperation:** Membership of the Polish Police in the European Traffic Police Network ROADPOL (formerly TISPOL), exchanging experiences, best practices, information on road traffic regulations, participating in European control actions, attending international conferences, study visits, and international project implementation.

8

Polish and Norwegian systemic actions to improve RTS

8..Polish and Norwegian systemic actions to improve RTS

8.1. Educational activities

Issues related to education on correct and safe behaviour in road traffic are included in both the Polish and Norwegian national road traffic safety (RTS) programs. In the Polish *National Road Traffic Safety Program 2021-2030* (NPBRD), the assumptions regarding education are described in the chapter *Pillars of Action*, under the subsection *Human*. Other elements of the program related to education were discussed in one of the previous subsections of this study. Further details on the subject can also be found in the Implementation Program for 2024-2025 for the National Road Traffic Safety Program 2021-2030.

Norwegian educational actions on safe participation in road traffic are described in several documents, particularly in the report prepared by the advisory group at *Trygg Trafikk*, titled *"A model for quality assurance and evaluation of programmes in the efforts to promote traffic safety"*, and in the *National Plan of Action for Road Safety 2022-2025*, where the key activities in this area are outlined. A comparative overview of road safety education activities in Poland and Norway is presented in the table below. The description is structured to enable comparisons of educational efforts in both countries.

Table 34. Comparison of road safety educational actions included in RTS programs in Poland and Norway

Comparison element	Poland	Norway
1. Developed action plan	Yes (general description)	Yes (general description)
2. Program guidelines	None (reference to the general accident report)	Yes (detailed and justified as to why they are important)
3. Program objective	Yes, Vision Zero (broadly formulated: long-term goal of no severe injuries or deaths in traffic accidents).	Yes, Vision Zero (smart transport, priority for public transport, promotion of cycling, sustainable societal development).
4. Thematic groups for education	General topics: a) speed, b) driving under the influence of drugs, c) fatigue and distraction, d) improper or non-use of seat belts and child restraints, and other protective equipment.	Comprehensive action plan covering various topics depending on the target age group.
5. Target group	1. Young drivers, 2. Children, 3. Elderly road users (60+), 4. Disabled persons, 5. High-risk drivers, 6. Pedestrians, 7. Cyclists, 8. Moped riders, 9. Motorcyclists, 10. Soldiers.	1. Entire society from 3-year-olds to those aged 60+, 2. Teachers and educators in nurseries, kindergartens, primary and secondary schools, 3. Parents.

Comparison element	Poland	Norway
6. Program content	Presented very generally.	1. Detailed in textbooks for different age groups in schools at various educational levels, 2. Teachers' manuals with guidelines on effective pedagogical methods, 3. Detailed program content for each age group.
7. Mission and strategy	None.	Very comprehensively presented.
8. Who will implement the program	National campaigns, SKRBRD, Police, GDDKiA, Main Headquarters of the Military Police.	Teachers in nurseries, kindergartens, primary and secondary schools, public campaigns.
9. Place of education	No information provided.	Nurseries, kindergartens, primary and secondary schools, local governments, daycare centres, media, social media platforms, apps.
10. How results will be measured	Generally described: reducing road accidents, increasing traffic safety awareness among road users, promoting safe attitudes and behaviours in traffic.	Experiments to test the effectiveness of education.
11. Priorities	Shaping safe behaviour among road users. Protecting road users.	Higher awareness of traffic hazards, increasing educational effectiveness, identifying reasons for any shortcomings in this area.

Source: own elaboration based on: *Nasjonal tiltaksplan for trafikksikkerhet på vei 2022–2025*, *Narodowy Program Bezpieczeństwa Ruchu Drogowego 2021–2030*.

When comparing the outlined educational programmes on safe behaviour in road traffic in Poland and Norway, clear differences in the planned actions become evident. The actions planned for the coming years in Poland appear to be a response to the current most pressing issues in national road traffic. Although the target groups for these actions have been identified, there is a lack of explanation as to why only these groups are to be included in the educational efforts. The education is intended to be more informational rather than thorough learning. Even reaching out to students in schools is expected to take the form of so-called meetings. There is a lack of detail on who will implement the educational campaigns, what methods will be used, and how these campaigns will be conducted. The report only mentions the institutions responsible for the implementation. There is no detailed plan on how the effectiveness of these actions will be measured (research programme).

8.2. Traffic management and supervision measures

The smooth and safe flow of traffic requires not only appropriate infrastructure but also **skilful management of traffic, along with supervision**, which influences the shaping of desired (safe) behaviours among road users and the use of infrastructure in accordance with its intended purpose. The diversity of solutions and technical standards of infrastructure, adapted to the functions it serves and societal needs, affects how it is expected to be used. This usage should be easily understood by users, but in many situations, it is necessary to provide "prompts" for how they should behave. This can concern, for example, regulations regarding road accessibility, restrictions on use by users

posing potential safety risks, or speed limits. Traffic management is also connected with purposeful actions on the environment, mitigating nuisances in the road's surroundings, efficient use of capacity, and protecting infrastructure from excessive wear. However, this chapter will focus only on management and supervision issues related to road safety.

In general, traffic management and supervision activities related to road safety include:

- Speed management.
- Supervision of dangerous behaviours other than speeding, such as running red lights, driving under the influence of intoxicants, or using devices that cause distraction.
- Monitoring the use of safety devices in vehicles.
- Inspection of vehicle technical conditions and their equipment.
- Regulating and controlling traffic through traffic organisation measures, such as prohibitions, mandates, and dynamic road signs.

8.2.1. Speed management

In traffic management and supervision efforts, speed management emerges as a key measure, as it directly influences one of the most critical traffic parameters affecting road accident risk, including the severity of such incidents.

There is sufficient research, studies, and statistical data analyses on road accidents confirming that speed not adapted to road and traffic conditions accounts for nearly one-third of accidents caused by driver error. Moreover, the significant role of speed as a contributing factor to accidents covers a wide range of values, from relatively low speeds in urban areas to high speeds on expressways and motorways. Excessive speed can also be an indirect cause of other unsafe behaviours, such as improper overtaking, unsafe crossing of pedestrian crossings, or failure to maintain safe distances. If these causes of accidents are considered, the share of excessive speed as a direct or indirect factor in accidents may reach as much as 50%. The relationship between speed and the number and severity of accidents can be partially explained by simple physical models and models describing human behaviour, which show that:

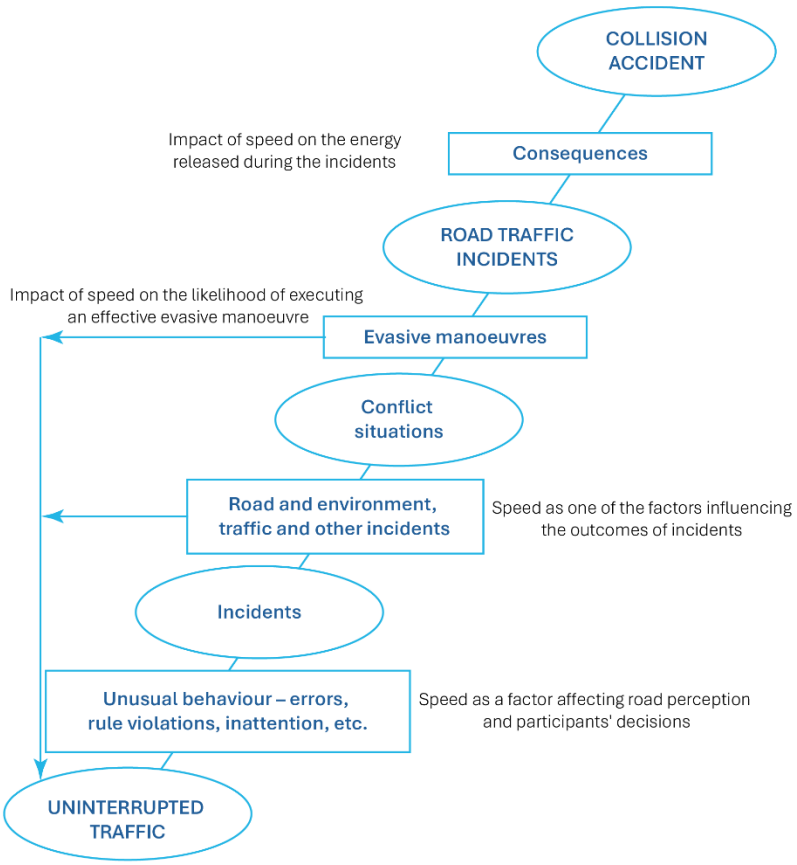
- As speed increases, both the distance travelled during the driver's reaction time and the braking distance increase, resulting in a longer total stopping distance in emergency situations. Additionally, higher speeds intensify the effect of road surface conditions on braking distance.
- The energy involved in a collision increases with speed. This not only leads to more severe consequences from collisions with other vehicles or fixed objects but also affects the distances vehicles are thrown after a crash, increasing the likelihood of secondary accidents.
- Higher speeds elevate both the likelihood and severity of pedestrian-involved accidents. Over 95% of pedestrians survive being struck by a vehicle travelling below 30 km/h, but this survival rate drops to around 60% when the vehicle's speed is 70 km/h.[231]

[231] Rosén, E., Sander, U. *Pedestrian fatality risk as a function of car impact speed*, in: "Accident Analysis and Prevention", vol. 41 (3), 2009.

- **At higher speeds, the balance of vehicles on curves deteriorates** due to centrifugal forces, which decrease tire grip on the road surface.
- **As speed increases, drivers' perception of the road and surroundings changes**. With an increasing amount of information to process in a short time, drivers' field of observation narrows. This is particularly dangerous in mixed-traffic areas, such as cities, where many important visual cues must be processed. At higher speeds, the ability to absorb these crucial details diminishes, raising the risk of accidents.
- **Higher speeds require better visibility conditions**, which may be difficult to achieve in urban environments

The connections between speed and accident risk highlighted above indicate, among other things, the crucial role that speed plays in minimizing the occurrence of traffic incidents and increasing the chances of returning to a normal driving state when conflict situations arise. Although this aspect of speed's impact on accident risk is not directly reflected in collected statistical data on traffic incidents, it is extremely important.

Diagram 6. Schematic representation of the sequence of events in road traffic from normal flow to road incidents, highlighting the role of speed in this sequence



Source: own elaboration based on: Durth, W., Bald, S. *Risk Analyses in Road Traffic*. In: *Forschung Straßenbau und Straßenverkehrstechnik*, Issue 531, Bonn-Bad Godesberg, 1987/1991.

Considering the obvious significance of speed's impact on Road Traffic Safety (RTS) in all known RTS improvement programs, including those in Poland and Norway, planned actions include speed management.

In general, **speed management** can be defined as a set of actions aimed at achieving a traffic state where vehicle speeds are adjusted to road and traffic conditions and can be considered potentially safe, while also meeting the conditions for efficient and minimally disruptive traffic.

In speed management, two primary groups of actions should be distinguished:

1. Establishing rational general and local **speed limits** that meet, at times competing, criteria such as economic, environmental, and road safety standards.
2. **Influencing driver behaviour to achieve the desired speed**, including compliance with imposed limits. These influences can be implemented through: legal measures, planning solutions, road infrastructure and traffic organization solutions, supervision, education, or advanced technologies.

This understanding of speed management illustrates that this task cannot be assigned to a single institution alone. Speed management should adhere to the **4E principle**, which stands for *Engineering, Enforcement, Education*, and *Emergency services*. According to this principle, speed management should include:

1. **Engineering:** Establishing speed limits appropriate for the road's function and technical standard; designing and operating roads to match the desired (expected by road users) speed; using physical measures to encourage drivers to travel at the desired speed.
2. **Enforcement:** Monitoring and regulating actual vehicle speeds to ensure compliance with traffic laws and speed limits.
3. **Education:** Disseminating information about the impact of speed on road safety; increasing drivers' awareness of speed reduction measures. Education can also include providing real-time information to drivers about their current speed.
4. **Emergency Services:** Ensuring the capability for rapid response to traffic incidents.

This division of tasks confirms the intersectoral connections that should be and are coordinated in road safety improvement programmes.

In Poland, speed management is not a separate priority but is included within the following pillars of the National RTS Program (NPBRD):

- **Safe Person** – under the priority "shaping safe behaviours of road users" and as actions "supervision" and "education".
- **Safe Road** – in the priorities "reducing the severity of road accidents", "improving the speed management system", and as a general direction of actions "supervision".

Within the mentioned priorities and directions of action, the recommended measures for speed management are:

- Implementation of traffic calming measures.
- Speed zoning in built-up areas.
- Transformation of the road network to achieve a hierarchical structure.
- Optimization of the speed enforcement system.
- Modification and optimization of the penalty system for speed violations.

- Standardization of speed limit application principles.
- Utilization of Intelligent Transport Systems (ITS) in speed management.
- Expansion of the automatic speed enforcement system.
- Clarification of the responsibilities of institutions responsible for speed supervision.

In Norway, speed management is a distinct intervention area labelled "Speed," encompassing the following actions:

- Fixed local speed checks.
- Mobile speed checks.
- Local and sectional automatic speed checks.
- Area-wide speed restrictions in municipalities with or without street network modifications.
- Systematic speed limit setting.
- Road reviews to identify sections with features encouraging dangerous speeds.

Automation of speed enforcement involves monitoring and recording traffic violations, with vehicle/driver identification carried out in an automated manner, i.e., without the physical presence of police or other authorized control agencies. Identification is achieved through photographing the vehicle and driver. Vehicles and drivers are photographed from the front. Automated speed control can be conducted locally or sectionally (measuring the average speed between two fixed points). Devices at measurement points are typically well-marked – both in Poland and Norway, they are additionally signposted. In 2022, Norway had 295 automatic speed enforcement points, while Poland had 524. Sectional speed measurements in 2022 were conducted in Norway on 31 sections and in Poland on 34 sections. In both countries, the responsibility for all speed violations lies solely with the driver.

Automated speed measurement locations are determined based on established criteria. In Norway, these are locations where, over a 6-year period, accidents involving casualties have occurred, and at least 20% of vehicles exceed the permitted speed by 10% or more. The length of a section covered by automatic speed enforcement cannot be less than 3 km. In Poland, the criteria for selecting sections for automatic speed enforcement ensure that only locations with very high accident risks and significant speed limit violations are monitored. The general requirements for selecting locations for automatic speed enforcement and the placement of related devices are outlined in the Regulation of the Minister of Infrastructure of October 12, 2021, amending the regulation on detailed technical conditions for road signs and signals, road traffic safety devices, and the conditions for their placement on roads

An important group of speed management measures consists of devices used within ITS (Intelligent Transport Systems). These include:

- **Variable message signs** displaying dynamic speed limits based on weather conditions, changing traffic hazards throughout the day (e.g., school zones), or seasonally (e.g., tourist traffic), as well as for periodic roadworks.
- **Variable message signs integrated with traffic signals** – displaying speed limits based on the approaching vehicle's speed or the traffic signal phase.

- **Signs or variable message boards** informing about traffic disruptions such as accidents, traffic congestion, or other disturbances requiring speed reduction, with a graduated scale of this reduction.
- **Signs activated upon detecting speed limit violations**, reminding drivers of the speed limit value.

8.2.2. Effectiveness of speed management measures

Automated speed enforcement is considered one of the most effective measures for improving road safety. Research from abroad, including Norwegian studies, has found that the number of fatal accidents decreased by an average of 47% with individual speed cameras, and other types of accidents fell by 19%. The effectiveness of a single speed camera diminishes with distance, not exceeding 0.5–1 km. Average speed cameras (section speed control) reduce the number of fatal or serious injury accidents by 41% and the total number of accidents by 20%.[232]

While similar comprehensive studies are lacking in Poland, fragmentary research also supports the beneficial impact of automated enforcement on reducing accidents and their casualties. For instance, segmental studies[233] indicate that the number of fatal and serious accidents fell by an average of 48% with individual speed cameras.

Stationary random speed checks are also considered very effective. One Norwegian study[234] reported that stationary speed checks reduce the number of accidents by 23% near the checkpoint and by 17% when considering a broader area. Speed checks visible to road users have the greatest impact in the vicinity of the checkpoint. There is insufficient data to quantitatively estimate the effect of mobile speed checks on the reduction of accidents and casualties.

The implementation of speed zoning in urban areas, including the designation of zones with speed limits of up to 30 km/h, is becoming increasingly common. It is reasonable to assume that this measure reduces the number of fatalities and serious injuries in road accidents. The impact of such measures on road safety can be estimated primarily through international research findings,[235] which suggest a potential reduction in the number of accidents with injuries by approximately 10–35%.

In the case of Poland, broader studies[236] indicate that after introducing 30 km/h speed zones and traffic calming measures, a reduction in fatal accidents of about 37% can be expected, and a reduction in both fatal and serious injury accidents combined by 27%.

Changes in speed limits may affect designated sections of roads or involve a general change in allowable speeds for selected categories of roads across the network, such as reducing the permissible speed from 90 to 80 km/h on single-carriageway rural roads. In such cases, the impact on the reduction of accidents and casualties will depend on the actual change in driver

[232] Høye, A., & Elvik, R. *Trafikksikkertshethandboken*. TØI, www.tshandbok.no.
[233] Gaca, S., Kieć, M., Jamroz, K., et al. *Badania skuteczności środków zarządzania prędkością i ich wyniki*. National RTS Council. Research Report, 2016.
[234] A. Høye, R. Elvik, *Trafikksikkertshethandboken*. TØI, www.tshandbok.no.
[235] *CMF Crash Modification Factors,* Clearinghouse, www.cmfclearinghouse.org/resources_hsm.cfm; Elvik, R., Høye, A., Vaa, T., et al. *The Handbook of Road Safety Measures: Second Edition*. Emerald Group Publishing, 2009.
[236] Gaca, S., Kieć, M., Jamroz, K., et al. *Badania skuteczności środków zarządzania prędkością i ich wyniki*. National RTS Council. Research Report, 2016.

behaviour, rather than the formal change in the speed limit value. To estimate the effects of such changes, the VTI model[237] can be used. However, in simplified terms, it can be assumed that each 1 km/h reduction in average speed will result in a 5% decrease in the number of fatal accident victims.

In Poland, spot checks were conducted to assess the impact of changing speed limits on actual speed reduction. These studies found that implementing local speed limits typically reduced the average speed by 4.4 km/h to 11.9 km/h, depending on the speed limit value (from 6.8% to 13%).[238]

The use of **variable speed limits and recommended speed displays** generally results in greater speed uniformity among vehicles according to current traffic conditions, which improves safety. Such signs typically reduce the number of accidents by an average of 16%.[239] Meanwhile**, variable speed limits with additional warnings about difficult weather or road conditions** (mainly fog or slippery surfaces) reduce the number of accidents by an average of 29%. These values pertain to sections affected by the mentioned signage.

8.2.3. Other monitoring measures

Among other monitoring measures indicated in national road safety programs, it is important to highlight the **oversight of dangerous behaviours by road users, including running red lights, driving under the influence of intoxicants, using distracting devices, monitoring the use of safety equipment in vehicles, and checking the technical condition of vehicles.**

In Poland, the aforementioned monitoring measures are included in the following pillars of the National Road Traffic Safety Program (NPBRD):

- **Safe Person**: as a direction for actions under "monitoring," encompassing driving under the influence of alcohol, drugs, and similar substances; driving with distracted attention, particularly due to mobile devices; improper or non-use of seat belts, child safety devices in vehicles, and protective helmets by moped riders and motorcyclists; intensifying police oversight in areas with high pedestrian risk, including direct supervision by police officers at pedestrian crossings, using tools such as unmanned aerial vehicles (drones).
- **Safe Vehicle**: as a direction for actions under "monitoring," including intensifying oversight of mandatory vehicle equipment and the correct use of protective devices and systems; increasing and optimizing police and Road Transport Inspectorate actions related to vehicle technical condition checks.

In Norway, oversight measures other than speed management are part of 5 out of 23 intervention areas outlined in the road safety program. These include:

[237] Cameron, M. H., & Elvik, R. *Nilsson's Power Model connecting speed and road trauma: Applicability by road type and alternative models for urban roads*. *Accident Analysis and Prevention*, 42, 2010.
[238] Gaca, S., Kieć, M., Jamroz, K., et al. *Badania skuteczności środków zarządzania prędkością i ich wyniki*. National RTS Council. Research Report, 2016.
[239] A. Høye, R. Elvik, *Trafikksikkertshethandboken*. TØI, www.tshandbok.no.

- **The use of seat belts and child restraint systems**: The police will conduct checks on the use of seat belts in vehicles. *Trygg Trafikk*, in collaboration with the police, will conduct biannual surveys to monitor the use of child safety measures.
- **Driving under the influence of intoxicants, including alcohol**: The police are required to conduct preliminary tests for alcohol use among all drivers stopped during traffic controls. The police will tighten procedures for checking for drugs in all drivers involved in accidents.
- **Distraction**: The police will continue to focus on the dangers associated with distractions and will conduct checks specifically targeting violations related to mobile phone use.
- **Road freight transport**: Inspections will focus on vehicle condition, winter equipment, load securing, and compliance with working and rest times.
- **Utilization of new technologies**: SV will employ known ITS solutions in the existing road network to reduce accidents, particularly on heavily trafficked motorways.

8.2.4. Effectiveness of other monitoring measures

Intensifying **police oversight** can increase the **prevalence of seat belt use among drivers and passengers**. The impact of such behaviours on road safety can be indirectly assessed by comparing the risk for those not wearing seat belts to those who are. Norwegian sources estimate that the risk of being involved in fatal accidents is 8.3 times higher for individuals not wearing seat belts compared to those who do, and the risk of participating in accidents resulting in serious injuries is 5.2 times higher for those without seat belts compared to those with seat belts.[240]

The impact of blood **alcohol** content checks on accident frequency was studied in various countries before 2010.[241] A meta-analysis found that in areas where such checks were conducted, the number of accidents decreased by an average of 14%.

The average relative risk of accidents involving injuries when driving under the influence of **intoxicants** (relative to sober drivers) varies depending on the type of drug and can range from 1.59 to 8.98. Acute intoxication can result in significantly higher risks.

The aforementioned meta-analysis estimated that the average relative risk of an accident while using a **mobile phone** while driving is 2.92. This risk varies depending on the severity of the accident, with a risk of 9.29 for fatal accidents, 4.10 for accidents with injuries, and 2.47 for collisions. This highlights the significant importance of enforcement measures aimed at eliminating the use of mobile phones by drivers.

In addition to targeted checks, it is important to mention **general patrols conducted by police officers**. During patrols, officers respond to any type of offense they observe, such as failure to yield, disregarding traffic signals, improper overtaking, speeding, or other traffic violations. There is limited research on the impact of road patrols on traffic safety, but Norwegian studies confirm a general trend of reduced accidents with increased patrol intensity.[242] Since the 1970s, only a few studies have indicated a positive impact of increased police presence on RTS. These studies suggest that

[240] Høye, A. *How would increasing seat belt use affect the number of killed or seriously injured light vehicle occupants?* Accident Analysis and Prevention, 88, 2016.
[241] Erke, A., Goldenbeld, C., & Vaa, T. *The effects of drink-driving checkpoints on crashes – A meta-analysis*. Accident Analysis and Prevention, 41(5), 2009.
[242] A. Høye, R. Elvik, *Trafikksikkertshethandboken*. TØI, www.tshandbok.no.

generally, road patrols by the police reduce the overall number of accidents by an average of 9%, and a 50% increase in patrols can reduce accidents with injuries by about 2%. Research on the impact of permissible blood alcohol levels on road traffic has shown that a certain level of police enforcement is a necessary condition for alcohol limits to be effective and for this effect to be sustained over time, though this is not a quantitative assessment.

8.2.5. Implementing traffic management and monitoring measures

Traffic management and supervision measures include actions that often require the cooperation of various institutions, particularly control services and road infrastructure management authorities. In such cases, it is crucial to identify a leading institution that will coordinate the implementation. The table below presents a summary of these measures, categorised into conventionally defined groups showing similarities in the Polish and Norwegian road safety programmes, along with the responsible entities. The measures listed in the table for Poland are derived from the multi-year programme up to 2030 and the Implementation Programme for 2024–2025.

The Implementation Programme for 2024–2025, which details tasks along with responsible institutions and funding indications, covers only a portion of the actions from the multi-year programme up to 2030. Therefore, the description of funding for some actions in the table may include provisional information subject to change. For Norway, the data is taken from the road safety implementation programme for 2022–2025.

The comparison of traffic management and supervision measures in the road safety programmes of Poland and Norway confirms a high level of alignment in actions and similar involvement of the police in traffic supervision. At the same time, it is evident that Norwegian SV has a disproportionately high level of engagement in supporting and organising speed management-related supervision compared to conditions in Poland.

Table 35. Summary of traffic management and supervision measures in RTS Programs in Poland and Norway

Group of measures		Poland	Norway
Speed management measures	Legislative and organisational improvements for speed management	Optimisation of the system for monitoring speed violations. **Implementing institution**: KRBRD. **Funding:** not specified, legislation without costs.	No directly formulated action.
		Modification and optimisation of the penal system for speed-related offences. **Implementing institution:** Ministry of Justice. **Funding:** legislation without costs.	No directly formulated action.
		Harmonisation of speed limit regulations. **Implementing institution:** Ministry of Infrastructure/DDP. **Funding:** legislation without costs.	Systematic establishment of speed limits (legal regulations). **Implementing institution:** SV. **Funding:** legislation without costs.
		Organisation of competencies for speed supervision. **Implementing institution:** not specified. **Funding:** legislation without costs.	No directly formulated action.
		No directly formulated action.	Road audits to identify sections with solutions encouraging dangerous speeds. **Implementing institution:** SV. **Funding:** SV's own budget.
		No directly formulated action.	Survey to identify national and county roads meeting the criteria for automated speed enforcement on segments or at specific points. **Implementing institution:** SV in cooperation with the Police. **Funding:** SV.

Group of measures		Poland	Norway
		No directly formulated action.	Preparation of a comprehensive strategy and plan for more effective use of automated speed enforcement. **Implementing institution:** SV in cooperation with the Police. **Funding:** Police budget.
		No directly formulated action.	Implementation of digital systems for issuing and processing fines. **Implementing institution:** Police. **Funding**: not specified.
	Road infrastructure restructuring	Restructuring the road and street network to achieve a hierarchical structure. **Implementing institutions:** GDDKiA, local road managers. **Funding:** national and local government budgets.	No directly formulated action.
	Various forms of traffic calming related to speed management	Speed zoning in built-up areas, implementation of traffic calming measures. **Implementing institutions:** GDDKiA, local road managers. **Funding:** national and local government budgets.	Area-wide speed limits in towns with or without street network restructuring. **Implementing institution:** counties, municipalities. **Funding:** national and local government budgets.
	New technologies in speed management	Use of ITS solutions in speed management. **Implementing institution:** road managers. **Funding:** road managers' funds.	Use of known ITS solutions in the existing road network to reduce accidents, especially on high-traffic motorways (including speed management). **Implementing institution:** SV. **Funding:** SV.
		Expansion of the automated speed monitoring system. **Implementing institution:** GITD. **Funding:** Inspectorate of Road Transport budget.	Local and section-based automatic speed controls. **Implementing institution:** Police. **Funding:** Police budget.

Group of measures		Poland	Norway
Other supervision measures	Control od driving under the influence of intoxicant	No directly formulated action.	Initial testing for alcohol impairment for all drivers stopped during traffic checks. **Implementing institution:** Police. **Funding:** Police budget.
		No directly formulated action.	Stricter procedures for checking for drugs in all drivers involved in accidents. **Implementing institution:** Police. **Funding:** Police budget.
		Control of driving under the influence of alcohol, drugs, and similar substances **Implementing body:** National Police Headquarters – Police. **Funding:** Police budget.	No directly formulated action.
	Distraction control for drivers	Control of non-use or improper use of seatbelts, child restraint systems, and helmets by moped and motorcycle riders **Implementing body:** National Police Headquarters – Police. **Funding:** Police budget.	Control of driving while distracted, particularly by mobile devices. **Implementing body:** Police. **Funding:** Police budget.
	Control of seatbelts and other safety devices in vehicles	Control of non-use or improper use of seatbelts, child restraint systems, and helmets by moped and motorcycle riders. **Implementing body:** National Police Headquarters – Police. **Funding:** Police budget.	Control of non-use or improper use of seatbelts, and child restraint systems **Implementing body:** Police. **Funding:** Police budget.
		No directly formulated action.	Biennial inspection studies on the use of child safety devices. **Implementing body:** *Trygg Trafikk* in cooperation with the Police. **Funding:** *Trygg Trafikk*'s resources.
		Stationary local speed controls.	Stationary local speed controls.

Group of measures		Poland	Norway
	Traditional Police enforcement	**Implementing body:** National Police Headquarters – Police. **Funding:** Police budget.	**Implementing body:** Police. **Funding:** Police budget.
		Mobile speed controls. **Implementing body:** National Police Headquarters – Police. **Funding:** Police budget.	Mobile speed controls. **Implementing body:** Police. **Funding:** Police budget.
		Intensified police supervision in areas with high pedestrian risk. **Implementing body:** National Police Headquarters – Police. **Funding:** Police budget.	No directly formulated action.
		Direct police supervision of pedestrian crossings, including the use of unmanned aerial vehicles (drones). **Implementing body:** National Police Headquarters – Police. **Funding:** Police budget.	No directly formulated action.
	Vehicle condition and equipment inspections	Intensification of supervision regarding mandatory vehicle equipment and the correct use of protective devices and systems in vehicles. **Implementing body:** National Police Headquarters / GITD. **Funding:** Police and ITD budgetary funds.	Controls in freight transport, including vehicle technical condition, winter equipment, load securing, and working and resting times. **Implementing bodies:** SV, Norwegian Labour Inspection Authority, Norwegian Customs, Norwegian Tax Administration, Police. **Funding:** Own funds of the controlling bodies.
		Intensification and optimization of activities by the Police and Road Transport Inspection (ITD) regarding vehicle technical condition inspections. **Implementing body:** National Police Headquarters / GITD. **Funding:** Police and ITD budgetary funds.	No directly formulated action.

Source: own elaboration based on: *Nasjonal tiltaksplan for trafikksikkerhet på vei 2022–2025*, *Narodowy Program Bezpieczeństwa Ruchu Drogowego 2021–2030*.

8.3. Infrastructure actions resulting from national and local RTS programs

8.3.1. Characteristics of actions and their links to priorities in RTS Programs

One of the fundamental factors influencing road safety is **the quality of road infrastructure**, which is often linked to speed management solutions.[243] According to Norwegian research findings, actions related to road infrastructure and speed management within RTS programs that result in lower speeds can reduce the number of fatal and severe injury accidents by up to approximately 43%. Therefore, one of the priorities of the National RTS Program (NPBRD) is actions related to "safe roads," which should ensure a high level of RTS for all road users while reducing actual vehicle speeds, considering the standard of road infrastructure in a given location. This should significantly contribute to reducing the severity of accidents.

The pillar of the NPBRD titled "Safe Road" includes actions in three priorities:

1. Reducing the severity of road traffic accidents, which include:
    - Identifying high-risk roads.
    - Analysing and verifying the road environment for safe and "forgiving" solutions.
    - Monitoring the behaviours of road users.

This priority also encompasses infrastructure actions with the greatest potential to reduce road traffic hazards, including measures for:

- Traffic calming.
- Reducing the severity of accidents associated with "non-forgiving" road environments.
- Reducing the number of accidents involving pedestrians and cyclists.
- Reducing the number of accidents caused by vehicle collisions.

2. Development of modern RTS management systems, which includes actions related to:
    - Promoting and implementing independent road traffic safety audit procedures and optimizing road review methods.
    - Developing comprehensive ITS solutions for traffic management and road infrastructure safety.

3. Improvement of speed management systems, which includes actions related to:
    - Standardizing speed limit regulations.
    - Utilizing ITS solutions for speed management.
    - Implementing modern technologies to support speed management.

[243] Elvik, R., & Høye, A.K. *Hva forklarer nedgangen i antall drepte eller hardt skadde i trafikken etter 2000?* TØI-rapport 1816/202.

In the "Safe Road" pillar, there are not only infrastructural actions but also measures related to management, supervision, and education. However, the main infrastructural actions outlined in the NPBRD relate to the priority of reducing the severity of road accidents within the "Safe Road" pillar. Additionally, infrastructural actions are also included in the "Safe People" pillar, which addresses priorities such as:

1. Promoting safe behaviour of road users, which includes actions related to: implementing traffic calming measures, speed zoning in built-up areas, transforming road and street networks to achieve a hierarchical structure;

2. Protecting road users, which encompasses actions related to: implementing road safety measures for protecting road users, developing and promoting traffic calming measures,

which can also be achieved through changes or improvements to infrastructure..

When carrying out infrastructure tasks, it is important to connect them with legislative and educational activities and ensure the necessary knowledge transfer regarding the solutions used. This should guarantee maximum effectiveness relative to the costs incurred and should cover:

- the most effective typical and atypical infrastructural measures for improving RTS, along with an assessment of the effectiveness of selected solutions in national conditions;;
- research on evaluating the effectiveness of various road infrastructure elements on RTS, including the development of RTS forecasting models;
- research in key RTS areas, taking into account existing road infrastructure solutions (unprotected road users, road environment, severity of incidents, etc.)..

Actions related to infrastructure but associated with traffic management and supervision are described in Section 8.2.

In Poland, infrastructural solutions primarily encompass six groups of actions:

1. Completion of the motorway network.
2. Expansion of the road network with a central dividing strip to eliminate the risk of head-on collisions (expressways).
3. Construction of bypasses around towns and villages.
4. Construction of new engineering structures (bridges, culverts) along with elements that improve road safety, such as sidewalks replacing existing structures that do not meet technical and safety standards.
5. Installation of specialized safety nets to protect pedestrians from falling on engineering structures.
6. Comprehensive safety improvements as part of road expansion or reconstruction, including: widening of carriageways, correction of horizontal curves, elimination of conflict points by building additional lanes to reduce the number of access points from national roads, reconstruction of intersections such as adding left-turn lanes, construction of roundabouts, sidewalks, bicycle paths or pedestrian and bicycle paths, and bus bays.

In Norway, infrastructural measures are outlined in the National Transport Plan for 2022–2033 under the titles "Road Safety Measures and Infrastructure" and "Measures for Pedestrian and Cyclist Safety in Urban Areas," as well as in the Road Safety Improvement Program. However, these measures are implemented on a much smaller scale compared to Poland. In the Norwegian RTS Program, infrastructure is specifically addressed in one area of intervention: "Head-on Collisions and Run-Off-Road Crashes." Additionally, infrastructural actions are part of other areas and fall within 4 of the 22 intervention areas, which include the following groups of actions:

1. Completion of the motorway network.
2. Expansion of the road network with a central dividing strip to eliminate the risk of head-on collisions.
3. Modernization of tunnels longer than 500 meters to meet new road safety requirements.
4. Infrastructural solutions to improve safety on the way to and around schools through comprehensive programs like "Hjertesone" and local interventions, including: the construction of pedestrian crossings at different levels, sidewalks, bike lanes on roads, improving technical standards of critical road sections, removing obstacles from road surroundings, correcting horizontal curves, and building roundabouts.

8.3.2. Implementation of infrastructure-related actions

Infrastructure-related actions are primarily carried out by national and local road authorities. The adjacent table provides a summary of the actions implemented in both countries. The data for Poland is derived from the National RTS Council Report (*State of Road Traffic Safety and Actions Taken in 2023*) and the long-term programs up to 2030 and the Implementation Program for 2023–2025. The Implementation Program for 2024–2025, which provides a detailed account of tasks along with responsible institutions and funding indications, includes only a portion of the actions from the long-term program up to 2030. Therefore, the financing descriptions for some actions in the table may include provisional information subject to change. For Norway, the data comes from the Road Safety Implementation Program for 2022–2025.

Table 36. Summary of infrastructure actions in RTS Programs in Poland and Norway

Poland	Norway
Implementation of investment tasks improving road safety on the existing network of national roads managed by GDDKiA *Output indicator:* a) Length of completed road expansions/reconstructions [km], b) Number of completed engineering structures (bridges, culverts) [units]. ***Implementing unit:*** Ministerstwo Infrastruktury/DDP. ***Funding:*** State Budget.	Actions for safe school routes and school transport Infrastructure solutions improving safety on the way to and around schools within the comprehensive “Heart Zone – Hjertesone” programs. ***Implementing unit:*** SV, municipalities, Norwegian Environment Agency. ***Funding:*** State budget, municipalities.
Implementation of the Safe Road Infrastructure Program 2021–2024	Actions for pedestrians and cyclists

Poland	Norway
Output indicator: Number of completed investment tasks improving road safety within the Safe Road Infrastructure Program 2021–2024 [units]. ***Implementing unit:*** Ministry of Infrastructure / DDP. ***Funding:*** National Road Fund, State Budget (preparation costs).	Implementation of tasks ensuring the improvement of pedestrian and cyclist safety and reduction of accidents involving micromobility. ***Implementing unit:*** SV, municipalities. ***Funding:*** State budget, municipalities.
Implementation of the 100 Bypasses Construction Program for 2020–2030 ***Output indicator:*** Number of bypasses opened to traffic in a given year [units]. ***Implementing unit:*** Ministry of Infrastructure / DDP. ***Funding:*** National Road Fund.	Actions for reducing head-on collisions and road departures. Completion of the motorway network and development of divided roads. ***Implementing unit:*** SV. ***Funding:*** State budget.
Investment in local roads (Government Road Development Fund) ***Output indicator:*** Utilization of funds. ***Implementing unit:*** Ministry of Infrastructure / DDP. ***Funding:*** National Road Fund.	Actions for tunnel safety Modernization of tunnels longer than 500 m to meet new RTS requirements. ***Implementing unit:*** SV. ***Funding:*** State budget.
Implementation of the Government Program for the Construction of National Roads up to 2030 ***Output indicator:*** Total length of constructed A and S road sections [km]. ***Implementing unit:*** Ministry of Infrastructure / DDP. ***Funding:*** National Road Fund, including EU funds.	
Installation of nets between gaps in engineering structures ***Output indicator:*** Number of nets installed between the spans of engineering structures. ***Implementing unit:*** GDDKiA. ***Funding:*** State budget.	
Implementation of the “Safe Pedestrian” project – equipping pedestrian crossings and schools with traffic education resources ***Output indicator:*** Number of equipped pedestrian crossings. ***Implementing unit:*** Ministry of Funds and Regional Policy. ***Funding:*** Cohesion Fund / State budget.	
Actions to improve RTS implemented by local authorities ***Output indicator:*** Completed investment. ***Implementing unit:*** Local authorities, GDDKiA. ***Funding:*** State budget, EU, local budgets, National Road Fund.	

Source: own elaboration based on: *Nasjonal tiltaksplan for trafikksikkerhet på vei 2022–2025*, *Narodowy Program Bezpieczeństwa Ruchu Drogowego 2021–2030*.

In comparing infrastructure actions between Poland and Norway, it is evident that **Poland** places a significantly greater emphasis on infrastructure investments. The substantial focus on infrastructure in Poland reflects the ongoing challenges observed in Polish RTS indicators, particularly regarding the severity of accidents. Consequently, planned infrastructure actions in Poland are primarily aimed at reducing fatalities and serious injuries on the roads.

However, it is important to note that Polish infrastructure increasingly meets safety requirements across the entire transportation system. The level of infrastructure development and RTS in Poland is now considered not only during the operational phase but also during the planning and design phases. The major issues affecting road safety in Poland continue to be the multifunctionality of roads and streets (lack of hierarchy), leading to a mixed structure of vehicles and users, the absence of space zoning, and inadequate access control.

In contrast, the **Norwegian** RTS program features more limited infrastructure actions. Norway focuses more extensively on comprehensive approaches, such as integrating supervision and education, or combining infrastructure actions with other sectors, as seen in initiatives like "Heart Zones – Hjertesone." The Norwegian RTS program tends to be more oriented towards operational aspects and is planned within the financial capabilities of the implementing institutions.

9

Recommendations

9..RECOMMENDATIONS

9.1. Recommendations for changes in legal regulations and structures responsible for RTS

The synthetic analysis of legal aspects of the RTS management system in Norway prompts consideration of which legal solutions implemented there might be adapted for Poland. This is particularly significant given that Norway's road traffic fatality rate (21 per 1 million inhabitants) remains more than half lower than that of Poland (50 per 1 million inhabitants).[244]

The evaluation of Norwegian solutions can be divided into two areas:

- Solutions partially known to Polish regulations or the Polish RTS management system, or similar to Polish solutions.
- Solutions completely unknown to Polish regulations or the Polish RTS management system.

Each of these areas presents an opportunity for debate on how to update existing regulations in Poland to align more closely with effective practices observed in Norway.

9.1.1. Norwegian solutions partially known to Polish RTS regulations

(A) **Norwegian Solution: Establishment of a Specialized National Road Policing Service (UP) Unit.** UP is a specialized unit primarily responsible for road traffic control and collaboration with the Norwegian Public Roads Administration (SV) on road traffic safety (RTS) matters. This dedicated agency operates with a separate structure and specific tasks related to RTS.

In Poland, similar responsibilities are managed by specialized Traffic Departments within County Police Headquarters, Voivodeship Police Headquarters, and the Traffic Bureau of the National Police Headquarters. These departments are structurally integrated into the overall police hierarchy, reporting to the respective County or Voivodeship Police Commanders. Recommendation for Poland: Consider establishing a specialized National Road Policing Service unit similar to Norway's UP. This unit would have its own distinct structure and focus specifically on RTS, enhancing coordination and effectiveness in managing RTS. Such a dedicated entity could potentially improve the efficiency of traffic control and safety measures by providing a clearer focus and specialized expertise in the field.

(B) **Norwegian solution: Delegating the function of road management and traffic control to a single body** (respectively: Municipality, County Road Administration, or *Statens vegvesen*).

In Poland, the responsibility for road safety at the level of public administration is divided between "road managers" and "authorities managing traffic on roads." This does not facilitate cooperation and coordination in the area of road safety, and rather leads to numerous conflicts.

[244] *Ranking EU* Progress *on Road Safety. European Transport Safety Council*, 17th Road Safety Performance Index Report, June 2023., s. 50.

(C) **Norwegian solution: A significantly smaller number of road signs.** Elimination of the phenomenon of "over-signing" roads. Existence of individually created road signs conveying messages related to road safety.

Polish roads feature one of the highest numbers of road signs in Europe. Polish regulations also require road authorities to use appropriate signage in every case where drivers might need to assess the geometry of the public road during manoeuvres. This results in "over-signing" of roads, which does not aid driver clarity and focus but rather distracts them. Notably, in Norway, there is the possibility of creating individual signs placed in the road corridor to convey messages directly related to RTS.

(D) **Norwegian solution: An effective mechanism for halting roadworks that pose a threat to road safety.**

In Poland, mechanisms for halting roadworks that pose a threat to road safety are prolonged. The Polish police, road traffic management authorities, and road managers do not have legal mechanisms similar to those in Norway that enable the immediate removal of roadwork contractors from sites where the works are inadequately marked.

(E) **Norwegian solution: A more restrictive penalty points system.**

In Norway, the penalty points system is more restrictive, mainly due to the three-year period of validity. The Norwegian system emphasizes informing drivers about the possibility of losing their driving license if they reach half of the allowable penalty points. "Young drivers" in their probationary period receive double the number of penalty points.

(F) **Norwegian solution: Restrictive mechanism for revoking driving licenses for speeding offenses.**

In the Polish system, a temporary revocation of the driving license for 3–6 months occurs only after exceeding the speed limit by more than 50 km/h in built-up areas. In Norway, a similar sanction is applied when the speed limit is exceeded by more than 25 km/h, both in built-up and non-built-up areas. For speed violations exceeding 50 km/h in Norway, the driving license is revoked for 15–18 months, and the individual must retake the national driving test.

(G) **Norwegian solution: Extensive road safety education system in public schools, including preparation for driving tests.**

In the Norwegian system, there is an optional subject called "road traffic rules," which allows for teaching basic road safety information to prepare future drivers. Students participating in these classes receive additional benefits when taking the national driving test, providing motivational and encouraging elements.

9.1.2. Norwegian solutions unknown to Polish RTS regulations

(A) Norwegian solution: Same traffic rules apply on public and private roads.

In Norway, traffic regulations from the Road Traffic Act are applied to both public and private roads where traffic typically occurs. In Poland, there are five different factual states where the behaviour of a vehicle driver is interpreted differently depending on the road status where the offense or crime occurred. The Polish system can be confusing for road users.

(B) Norwegian solution: Individuals designing changes to permanent traffic organization affecting road safety must have relevant education and experience.

In Poland, there are no specific requirements for experience or qualifications for those designing or approving changes to permanent traffic organization. In Norway, individuals must have completed higher education in traffic engineering (or a related field), and for more complex projects, additional experience evaluated by *Statens vegvesen* is required.

(C) Norwegian solution: A second warning for incorrect signage of roadworks threatening road safety results in a ban on supervising roadworks for a period of one year.

In Poland, there are no similar regulations, and incorrect signage of roadworks only results in a fine for the offence committed. The correctness of roadwork signage by contractors is often overlooked. The Norwegian mechanism motivates proper signage of roadworks as incorrect signage negatively impacts the professional and personal life of the supervising individual (work supervisor, construction manager).

(D) Norwegian solution: Prohibition of alcohol sales at fuel stations and in public places (roads, squares, streets, parks). Restrictive alcohol sales hours on weekdays. Limitation on alcohol consumption and tasting by passengers in traffic. Prohibition of alcohol sales on Sundays and holidays. High-proof alcohol available only to individuals over 20 years of age.

In Poland, there are relatively few restrictions on the distribution and sale of alcoholic beverages (e.g., prohibition of sales on school and airport premises). In Norway, however, there is a comprehensive system focused on minimizing the availability of alcoholic beverages, especially for drivers (fuel stations).

(E) Norwegian solution: The amount of traffic fines is based on the offender's income, financial status, and financial capabilities.

In Poland, the amount of fines is set by a tariff (with minor adjustments possible by the traffic control authority or court). In Norway, fines are generally proportional to income (except for simplified fine mechanisms for certain traffic violations). This system encourages compliance with traffic regulations. Even minor speeding or driving under the influence can result in fines ranging from 84,540 NOK (over 30,000 PLN) to as much as 300,000 NOK (over 100,000 PLN). Thus, the sanctions are very severe.

(F) Norwegian solution: Unconditional imprisonment for driving under the influence of alcohol.

In Norway, the crime of *Promillekjøring* (driving under the influence) with a blood alcohol concentration exceeding 0.7‰ results in mandatory unconditional imprisonment (one month or more). In addition to the offense itself, such an individual is socially perceived as violating the *dugnad* (common responsibility) in the field of road traffic safety.

(G) Norwegian solution: Inevitability of punishment. Automatic conversion of fines to imprisonment.

The enforcement of fines for traffic offenses often becomes ineffective in both Poland and Norway. In Norway, in such cases, the National Norwegian Collection Agency (*Statens innkrevingssentral*) automatically requests the conversion of the fine into a prison sentence (without court or other institutions' involvement). The offender is then pursued by the police to serve the sentence. They can "redeem" themselves by paying the fine along with interest and enforcement costs.

9.1.3. Norwegian solutions potentially implementable in Poland that could have the greatest impact on improving RTS

In the case of implementing solutions in Poland, all the Norwegian solutions described above as partially known in Polish regulations would require "soft" legislative changes—within the framework of existing institutions and mechanisms functioning in the Polish RTS management system. However, these changes would necessitate modifications at the statutory level, amendments to relevant executive regulations, and orders from the Chief Commander of Police or the GDDKiA.

In the case of Norwegian solutions described in the previous subsection that are unknown to Polish regulations in the field of RTS, most of them would require the introduction of new institutions into the Polish RTS management system. These include:

- Establishing the same rules for traffic on public and private roads.
- Requiring specific education and experience for individuals designing changes to the permanent traffic organization.
- Introducing a ban on supervising roadworks for one year for individuals twice penalized with a reprimand for improper marking of roadworks that threaten traffic safety.
- Significant restrictions on the sale of alcohol.
- Tying the amount of fines for traffic violations to the offender's income, financial status, and financial capacity.
- Imposing an unconditional prison sentence for driving under the influence of alcohol.

Some of these solutions (e.g., the first two) would require a thorough restructuring of the general traffic rules (regulations) resulting from Article 1 and Article 10 of the Polish Road Traffic Law, as well as related laws (such as the Public Roads Act), structurally linked laws, and a range of executive regulations.

Solutions related to banning the supervision of roadworks for one year by individuals who have been twice reprimanded for improper marking of roadworks threatening RTS and introducing restrictions on alcohol sales require entirely separate new legislation and executive regulations.

A thorough overhaul of the system of penalizing drivers would be required at the level of the Misdemeanour Code, Penal Code, Code of Misdemeanour Procedure, and Code of Criminal Procedure. This would include solutions such as:

- Tying the amount of fines for traffic violations to the offender's income, financial status, and financial capacity.
- Imposing an unconditional prison sentence for driving under the influence of alcohol.
- Ensuring the inevitability of punishment through the automatic conversion of fines into imprisonment.

At the same time, changes would need to be introduced to the Act on Drivers and the Road Traffic Law. The last of the solutions outlined above would also deviate from the principle that the amount of punishment determined by a final fine or a final court judgment cannot be altered except through appropriate judicial proceedings (e.g., in the form of reopening the court proceedings or challenging a final fine).

9.2. Recommendations for planning and implementing RTS measures

The structure of the National RTS Program 2021–2030 (NPBRD) aligns with the general principles of such programs, in accordance with WHO, OECD recommendations, and European Union guidelines. However, there are also weaker aspects of this program, as well as of the implementation programs, which have been partially highlighted in Chapter 5 of this report and in other expert analyses.[245, 246] Therefore, it is advisable to introduce changes both in the national program and in regional road traffic safety programs, as well as in the practice of planning detailed solutions for implementing road traffic safety measures. Identifying such changes can benefit from not only the results of internal assessments and analyses but also from the experiences gained from the implementation of road traffic safety programs in Norway.

Formulating recommendations for changes to current practices becomes easier when general goals are first defined, which such changes aim to achieve. The primary goal of changes and corrections to the existing approach to road traffic safety programs is to make them more effective, i.e., to increase the likelihood of achieving the set ambitious overall goals and specific monitoring indicators for the program's implementation.

[245] Instytut Badawczy IPC, Openfield. *Raport końcowy z śródokresowego badania ewaluacyjnego Narodowego Programu Bezpieczeństwa Ruchu Drogowego na lata 2013–2020.* Opole, 2017.
[246] Najwyższa Izba Kontroli. *Informacja o wynikach kontroli „Bezpieczeństwo ruchu drogowego”,* KPB-4101-03-00/2013. Warsaw, 2014.

Key conditions for the successful construction of a programme with a high likelihood of success include:

- Access to **reliable sources** of knowledge about RTS issues.
- **Understanding the expected outcomes** of planned and subsequently implemented RTS improvement measures.
- **Awareness of changes in socio-economic processes** and their impact on societal functioning, as well as trends in RTS changes.
- **Identification of potential conflicts between the programme's goals and other programmes and societal expectations**, including the cost burden of implementing solutions.
- **Accurate identification of priority areas for RTS improvement**, including proper identification of risk groups both currently and in the future.

Even a well-constructed road safety programme will not achieve its set objectives without clearly **defined legal and organisational frameworks** and **appropriate funding principles**.

The above considerations are intended to guide the formulation of recommendations for planning and implementing road safety improvement measures in Poland. Below are the recommendations, limited to organisational and legal issues, with a distinction between those requiring legislative changes and those that do not.

9.2.1. Recommendations requiring legislative changes

Below are the recommendations, some of which are included in NPBRD 2030 but for which legislative work has not been undertaken for practical implementation. The most important ones are:

- **Referencing long-term global goals** (achievement of targets 3.6 and 11.2 of the 2030 Agenda) **and European goals** (Vision Zero by 2050) in transport policy, transport development strategies, road safety programmes, and similar documents.
- **Establishing a central legislative body for road safety management or assigning such responsibilities to specific traffic management authorities.** Equipping these bodies with competencies and necessary tools for effective planning, monitoring, coordination, communication, and financing of road safety activities.
- **Transferring to the above central executing body the management of an integrated database of road traffic events** and other data necessary for comprehensive road safety analysis.
- **Excluding the Police from handling collisions resulting in minor material damages located outside public roads, such as on parking lots.** Such damages should be dealt with directly by the participants of the incident and the insurance companies. The Police should not be involved in managing these incidents, which would translate into an increased time for actual supervision of road traffic.
- **Changing the scope and composition of the National RTS and Voivodeship RTS Councils**, including non-governmental organizations and representatives of scientific institutions dealing with road safety aspects. The establishment of a central executing institution does not exclude the existence of the National RTS Council and Voivodeship RTS Councils, but they would have a different range of tasks and responsibilities. The National RTS Council

should be provided with financial resources for conducting studies and research, which form the basis for issuing recommendations for good practices in road safety improvement.

- **Legally obligating local governments (counties) to undertake systematic actions for improving RTS**, including the creation of road safety plans and the designation of a responsible unit within the organizational structure for road safety.
- **Establishing a National Road Accident Investigation Commission as an independent institution**, in accordance with previously described competencies.[247] This requires defining the scope of duties for such a Commission, as it is not possible to conduct detailed investigations into all nearly 25,000 accidents, but it is feasible for selected serious accidents (with fatalities and serious injuries).
- **Legal changes to increase the effectiveness of penalty enforcement for traffic violations**, especially fines imposed through the automatic monitoring system.
- **Including traffic engineering activities related to traffic management projects in the group of regulated professions**, i.e., requiring certifications confirming relevant competencies.
- **Change in the model of preschool and school education, through better focusing it on the development of RTS culture**, which requires identifying leading institutions and providing the tools necessary for the implementation of assigned tasks.
- **Better cooperation between stakeholders involved in RTS programmes at all levels** (national, regional, local), especially between road managers and traffic managers.

9.2.2. Recommendations not requiring legislative changes

Below are recommendations primarily concerning the principles of formulating tasks in BRD programs and their implementation methods. These changes include:

- **Strengthening the role of The Transport Development Strategy until 2030 (Polish: *Strategia Rozwoju Transportu do 2030 r.*, SRT2030) as the overarching guideline for creating RTS programmes.** The long-term SRT should more clearly define the vision and strategic goals related to RTS, including quantitative targets. Such a detailed SRT would serve as the formal basis for developing the National RTS Programme and sectoral strategies and programmes, incorporating the RTS component.
- **Implementing an RTS policy that is more research-based**, with identified goals, more detailed planning of RTS measures, and embedded within institutional frameworks ensuring consensus (at the governmental and local levels) regarding goal setting and resource allocation for their implementation.
- **Developing strategies and launching research programmes that comprehensively address RTS issues**, i.e., within the "human – vehicle – road – environment" system and interactions between its elements. Research results, not only describing the current state but also explaining the conditions of identified RTS problems and forecasting changes, will provide a better knowledge base for planning RTS improvement measures in national conditions.
- **Regulating in Poland the definition of medically confirmed injured victims**, based on experiences from many countries (e.g., using the AIS injury classification). The lack of clear

[247] Krystek, K. (Ed.). *Zintegrowany System Bezpieczeństwa Transportu. Synteza*. Warsaw – Gdańsk, 2011.

criteria for different categories of injured victims causes problems in analyses and assessments of RTS levels in Poland.

- **Assigning tasks similar to those of the Norwegian TØI to a selected unit or group of units conducting comprehensive studies on RTS programme implementation**, including the effectiveness of implemented RTS measures, programme conditions, and monitoring across all intervention groups, or planning a research programme to achieve the above goals.
- **Developing manuals, catalogues, and examples of good practices, supported by research, showing the effectiveness and efficiency of applied RTS measures and improvements, using Norwegian methodologies and experiences**.
- **Developing manuals for conducting RTS audits and inspections and recommending audits and inspections in teams with a leader (meeting special requirements), using Norwegian experiences focused on road infrastructure operation**.
- **Conducting in-depth analyses of severe accidents (with fatalities and serious injuries) periodically (every 1–3 years) to gain accurate knowledge about the main causes of such traffic accidents and who is responsible**, and to create a knowledge base on the priorities for Police actions and other preventive measures in the following year or planned RTS programme.
- **Promoting RTS culture** among politicians, institutions (including the Police), organisations, and individuals involved in RTS, supporting the requirements set by Vision Zero, and giving high priority to actions and measures that have the greatest impact on RTS.
- **Development of a model and various forms of continuous education for target groups involving adult road users**. The forms of education should be tailored to the specific characteristics of the target groups and the RTS issues identified within these groups. Non-governmental organisations and associations related to RTS issues may play a supportive role in such education.
- **Better aligning planned RTS improvement measures with the specifics of generational changes in Polish society and technological advancements**. This includes, among other things, the need for changes in educational methods and the expansion of related institutions and organisations (NGOs, local associations, professional associations), as well as changes in vehicle fleets and road technical equipment to facilitate driving for drivers and autonomous vehicles.
- **Police actions related to RTS should be derived from national documents (transport development strategies and RTS programmes) and the basic Police strategy for crime prevention**, focusing on deterring and detecting serious traffic offences that may cause significant social and economic damage, as well as results from identifying new threats and periodic studies, analyses, and assessments of the effectiveness of applied measures.
- **Better management of safety**, including: establishing a common safety policy, division of roles, tasks, and responsibilities among stakeholders, reporting systems, risk assessment methods, safety training, safety procedures, and monitoring safety levels, considering the life cycle of the road network.
- **Promoting RTS actions at the local government level (municipalities and counties) by introducing a Norwegian-style certification of "road safety municipalities"** and financially

supporting them in implementing local RTS programmes (systemic action with established rules – described in examples of good practices included in the annexes).

- **Better utilisation of the potential of NGOs**, the Polish Road Congress (Polish: *Polski Kongres Drogowy*), professional associations, retirees' associations, youth organisations, cyclists' associations, environmental clubs, etc., in the division of tasks and their implementation. NGOs, foundations, and other associations generally bring together people committed to solving problems related to the profile of the organisation, which often includes safety and the broader concept of quality of life. Their experience can be used mainly in educational activities, promoting a culture of safety, identifying hazards, and enhancing specialist knowledge, e.g. among road designers and traffic management professionals. This is particularly important at the level of local government work and school education. So far, such forms of NGO and association activities have been very limited in Polish RTS programmes.
- **Better utilisation of the potential of public and private transport service providers** and their associated organisations in task division. This primarily concerns tasks related to education and promoting a culture of safety among employees, as well as influencing the conscious planning of personal journeys with a low level of risk.
- **Replacing sectoral education in RTS by introducing the planning of educational and promotional activities** in accordance with the principles of building an RTS culture across the entire population of road users.
- **Creating incentives for local governments implementing road infrastructure safety management according to EU Directive 2019/1936.**
- **Assigning greater importance in RTS plans to road maintenance, proper traffic management, and verification of proper safety measures at roadwork zones.**

Regarding infrastructure, recommendations for RTS programmes can be made only to a limited extent. This is due to the different levels of road infrastructure development in the two countries. The Norwegian RTS programme for infrastructure is significantly limited and more focused on identifying problems in the operation of infrastructure and purposefully planning expenditure on infrastructure, which in this case is high. Recommendations include:

- **Implementing infrastructure actions comprehensively**, in conjunction with other activities, e.g., by linking with supervision and education, such as the good practice example “Heart Zones – Hjertesone”.
- **A strong focus on unprotected road users (pedestrians and cyclists), users of so-called micromobility vehicles**, and considering the participation of **motorcyclists** in traffic (infrastructure safety aimed at the participation of motorcyclists in traffic).

9.3. Recommendations for Police actions

The comprehensive comparison in the area of RTS also covered aspects related to Police actions in both Norway and Poland. Based on these, conclusions can be drawn from the evaluation of the role and activities of the Norwegian National Road Policing Service (UP) in the RTS system, which may serve as recommendations for the Polish Police. This is particularly significant regarding the effective use of available resources, both human and technical, within the Polish Police. However, it is

essential to consider limitations arising from cultural (social behaviour) and legislative conditions related to Police operations in both countries. The scope of Police activities also results from legal regulations concerning the division of responsibilities in the RTS system among various institutions. Any potential limitations on the scope of Police actions in Poland or imposition of additional duties must be consistent with the tasks of other institutions and organizations within the RTS system.

The following recommendations summarize the previously presented broader scope of Police actions for RTS. The key recommendations for changes in the actions of the Polish Police include:

- **The need to implement changes in the cooperation between experts statutorily responsible for RTS (road authorities) and the Police in clarifying the causes, circumstances, and consequences of serious road accidents** (at least those involving fatalities and serious injuries). As a result of this cooperation, the Police's role in analysing the scene of the accident should be limited to investigative tasks (collecting information for preliminary and judicial proceedings) and transferring the competence for describing the role of infrastructure as a factor affecting the course of accidents to road authorities (RTS experts). The Police should not be required to participate in the planning and implementation of infrastructural countermeasures in the RTS area at a given location. Such duties should be fully assumed by the road authority, though this does not exclude collaboration with local Police units. The road authority should also work with other experts to assist in analysing and planning RTS improvement measures beyond infrastructural solutions. The recommended model of cooperation is for road authorities or road managers to establish an accident commission composed of experts representing various specializations.

- **Limiting the Police's role in collecting data for the national database**, which requires the prior clear designation of the unit responsible for maintaining the database of road incidents and their analysis, including detailed causal analysis of fatal and serious injury accidents. Such analyses should consider factors such as terrain conditions, existing traffic organization, driver condition, vehicle condition, and the time of the incident. Conducting more in-depth analyses should not burden Police officers, who are essential for supervisory functions. Therefore, it is necessary to restrict the Police's role to essential data collection and analysis activities that enable the functioning of a national database located outside Police structures. The involvement of the Police in interventions related to certain collisions with minor material damage and those occurring outside public roads, such as in parking lots, should also be limited. However, this service should influence the formulation of requirements for reporting road incidents to ensure high-quality information for RTS-related work (including accident scene sketches) and the method of providing and transmitting data to the database management institution. It is essential to implement improvements to the system of collecting, coding, and transmitting data on incidents reported by the Police. Additionally, it is worth considering a change in the method of compiling accident causes so that they are grouped in a more logical manner that facilitates drawing conclusions about key causes. This is particularly relevant for improving the grouping of causes related to driver errors in manoeuvring (which are indeed one of the fundamental issues on Polish roads), but their fragmentation in statistics makes them almost invisible.

- **Intensifying efforts related to the presence and visibility of the Police on the road**—even those that do not involve taking any action but simply make the Police visible to road users, which is perceived as a potential threat of punishment for prohibited actions. A prerequisite for such intensification is to limit the involvement of the Police in actions for RTS that can and should be entrusted to other institutions and organizations, including non-governmental organizations and professional associations.

- **Greater focus of the Polish Police's activities on prevention, education, and deterrence, and only then on sanctioning legal violations.** The actions of this service must be objective, avoiding interventions where not required by the situation. The Police should prioritize efforts involving preventive control measures that have the greatest impact on RTS (vulnerable road users, speed, driving under the influence, distraction). Planning such actions should consider the local specifics of RTS threats and, therefore, must be linked to current RTS analysis results. These actions should be included in periodically updated operational RTS plans of individual Police units.

- **A systematic approach to automatic supervision (not only concerning speed but also other offences) using new technologies and numerous recording devices (including cameras and monitoring), linked with a simplified system for enforcing violations.** The key role should be played by the implementation of automatic supervision primarily by the GITD, with supplementary support from the Police. Additionally, the Police should conduct only random checks, in accordance with an annually updated strategy (tailored to the updated assessments of risk levels in road traffic). In this regard, collaboration with Municipal Guards and other services is also recommended, which, however, requires legislative changes to extend powers for speed control. The automatic supervision system, after legislative amendments, should enable low-cost management and cover most locations identified as dangerous on Polish roads.

- **Limiting the involvement of the Police in procedures related to permanent and temporary traffic organization changes.** The Police should only review selected changes to the permanent traffic organization for significant roads (e.g., regional, national) concerning aspects of RTS, such as: speed management, right-of-way rules, signage at selected intersections, stopping and parking prohibitions, and potential conflict points between vulnerable road users (pedestrians, cyclists) and motor vehicles. The Police should not be obligated to participate in the review procedures for permanent traffic organization projects related to: the placement of informational signs, directional and location signs, restrictions on heavy vehicle traffic, or the placement of warning signs about animals. The Police should also not be required to participate in reviewing temporary traffic organization, such as agreeing on locations, plans, and methods for securing roadworks. However, this does not preclude the possibility of submitting comments on such traffic organizations, particularly based on observations of road sections with ongoing roadworks.

- **Equipping the Police with a legal mechanism to suspend improperly marked roadworks.** The Police should be provided with legally established mechanisms to unconditionally halt improperly marked roadworks and impose substantial fines (penalties/sanctions) on entities that incorrectly implement approved temporary traffic organization.

- **Collaboration, especially at the local level, in the implementation of educational and informational activities should be based on leveraging best practices rather than being treated as a routine obligation of the Police.** This should be merely a supportive role that assists the educational process, while the dominant part of tasks in this area should be carried out by legally designated leading institutions, including schools, with the support of regional or local RTS Councils, non-governmental organizations, and other associations related to RTS.

- **Collaboration in conducting scientific research and monitoring the state of RTS** by involving the Police in research projects and periodic monitoring actions of road users' behaviours.

The recommendations provided above do not cover all Police activities, as they do not address those considered obvious and performed as part of statutory duties, such as traffic supervision.

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The bibliography of legal acts (along with publishers) and court rulings from Poland and Norway used in the preparation of this publication can be found in the annexes (Annex 7).

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ANNEXES

Annex 1: Examples of best practices

Based on the review of road safety initiatives carried out in Norway, two practices are recommended for consideration in Poland as examples of best practices:

- The "Road Safety Certified Municipality" Certificate,
- The "Heart Zone – Hjertesone" initiative.

These practices exemplify a comprehensive approach to improving road safety at a local level, involving collaboration among all institutions working on road safety and the community.

It should be noted that these two examples do not constitute a closed list of recommendations. A significant portion of recommendations concerning changes to legal regulations, the structures responsible for road safety, actions by the Polish Police, and the planning and implementation of road safety improvement measures is presented in Chapters 9.1–9.3.

"Road Safety Certified Municipality" Certificate

The role of municipalities in RTS is substantial. Firstly, municipalities have a direct impact through their employees, who travel daily by car, bicycle, or on foot. In Norway, this influence is significant, as Norwegian municipalities employ over 0.5 million people (about 10% of the country's population). Secondly, municipalities have an indirect impact on RTS in several other areas. This includes their role as road managers, which involves tasks related to road design, lighting, traffic organisation, and maintenance of municipal roads. Thirdly, municipalities are buyers of transportation services and can set additional safety requirements for vehicles providing these services and their organisation, such as for school transport. Furthermore, by managing kindergartens and schools, municipalities also have a significant indirect impact on RTS. This includes providing information and training on safe road use for parents and school-aged children, as well as a direct impact through "building" walking habits, designing infrastructure around schools, and so on.

In Norway, for many years, efforts to improve RTS have also been undertaken at the local level, including in municipalities, which are the lowest tier in the country's administrative structure. These efforts have been planned, but largely focused on physical measures (e.g., pedestrian and bicycle infrastructure, physical traffic calming measures, intersection improvements, road signage enhancements, etc.). However, physical measures alone only partially determine the level of RTS. Therefore, the need for parallel actions has been clearly emphasized in strategic transport development documents as well as national and regional road safety improvement programs. This obvious statement required implementation in practice at the municipal level, where "soft" measures often had a low priority as they were less visible to the local community.

A successful attempt to shift the local approach from a limited view of improving road safety (RTS) to a comprehensive and practical intersectoral approach was the certification program by the Norwegian RTS Council (*Trygg Trafikk*) for municipalities with "safe road traffic" (*Gmina Trafikksikker*). The program began in 2015 with two municipalities, and by 2024, 184 municipalities—about 52% of all 356 municipalities in Norway—had been certified.

Obtaining the "Safe Road Traffic Municipality" certification does not impose any additional obligations on the local government, beyond more organized adherence to existing statutory and regulatory requirements. This means it does not incur extra costs, making it feasible for municipalities with limited budgets. A "Safe Road Traffic Municipality" is characterized by the integration of road safety (RTS) plans and procedures into its daily operations.[248] [249]

To become a certified "Safe Road Traffic Municipality," a local government must meet criteria established by *Tryg Trafikk*. Specifically, it must demonstrate that:

1. **The municipality has a RTS plan**.
2. The municipality has **guidelines for employees' business travel in road traffic**.
3. The municipality applies **procurement procedures for transport services that prioritize safety**.
4. The municipality has a **committee responsible for RTS**.
5. **RTS is integrated into the municipality's internal control system**, which includes rules for travel and transport under its jurisdiction and when procuring transport services.
6. **RTS is an annual topic for the municipality's occupational health committee**.
7. The municipality has **updated data on road traffic incidents** within its area.
8. **RTS is incorporated into the municipality's public health activities**.
9. The municipality has a **good system for processing requests for school transport services**.
10. The municipality **meets detailed criteria** specified for various sectors of its activities (described further in the text).

Although the above criteria focus on local actions, they ultimately contribute to the development of a RTS culture, with societal benefits that extend nationwide. Residents traveling in a municipality with a well-developed safety culture will also travel more safely beyond its borders.

The nature of the actions taken by a municipality with a "safe road traffic" certification, within a comprehensive approach to improving RTS, is well illustrated by the detailed tasks and requirements assigned to various municipal institutions and organizations.

Preschools and Nurseries:

1) Ensuring traffic safety in preschool operations:

   - Traffic education is integrated into the care and educational activities of the preschool and included in the annual preschool plan.

[248] *Veileder for en trafikksikker kommune. Trygg Trafikk,* www.tryggtrafikk.no/content/uploads/2024/01/Veileder_mal_trykklar-1.pdf
[249] Nævestad, T.-O., Milch, V. *Trafikksikker kommune som tiltak for å utvikle kommunal trafikksikkerhetskultur*. TØI-rapport 1853/2021, Oslo, 2021.

- The preschool imposes requirements on bus and taxi companies regarding seatbelt use and safe behaviour in traffic when purchasing transport services.
- Preschool staff are familiar with procedures for handling unforeseen dangerous situations and incidents during excursions.
- The preschool has developed procedures to ensure safety during walking, car, and public transport excursions.

2) Traffic education in preschool:

- Children learn the rules of the road that apply to pedestrians.
- Children are taught how to recognize situations in traffic.
- Children learn the principles of using seatbelts, bicycle helmets, and reflective gear.

3) Collaboration between preschool/nursery and parents:

- Nurseries have procedures to ensure child safety in the parking area and at the nursery gate, which are reviewed annually by parents and staff.
- Nurseries encourage parents to ensure the safety of children on their way to and from the nursery.
- Road safety and traffic education are discussed at annual meetings with parents.

Schools:

1) Ensuring traffic safety in school operations:

- The school, in cooperation with the parent committee, provides parents with recommendations for cycling to school.
- The school has procedures to ensure safety during walking, cycling, car, and public transport excursions under the school's supervision.
- The school has effective procedures to ensure adherence to plans by the staff.

2) Traffic education in school:

- The school has integrated traffic education into the local curriculum/annual plan, meeting the competency requirements for knowledge promotion.
- School-parent collaboration: The school’s traffic education program is a topic of annual parent meetings, and parents are involved in the school's road safety efforts, for example, through the Parent Committee.

Departments responsible for infrastructure:

- The municipality has an up-to-date list of priorities for infrastructural measures to improve RTS on municipal roads.
- The municipality has an up-to-date list of priorities for infrastructural measures to improve RTS on county and national roads (within the scope of competencies and agreements).
- The municipality has procedures for applying for funding for infrastructural measures to improve RTS.
- The municipality has and implements procedures for snow removal and the removal of vegetation that obstructs visibility on roads leading to schools.

- The municipality has procedures to ensure RTS in relation to construction works within its area.
- The municipality has procedures for addressing comments on RTS measures provided by other institutions, organizations, and residents.
- RTS is evaluated and emphasized when developing land use plans.

Healthcare service:

- Health centres have documentation specifying when and how RTS is included in meetings with parents and children.
- The municipal doctor is kept up-to-date on the municipality's RTS work.
- The municipal doctor ensures that general practitioners in the municipality have sufficient knowledge about medical staff responsibilities and how they can apply this knowledge to reduce the risk of road accidents.

Community organizations:

- The municipality encourages groups and volunteer associations to incorporate guidelines for safe transportation into their activities.

An example of a local program aiming to achieve the status of a "safe traffic municipality" is the RTS Plan of Averøy Municipality for 2023–2027.[250] This municipality, with nearly 6,000 residents and an area of 173.1 km^2, prepared the local plan in accordance with the principles outlined in the V722 "Urban Road Safety Plans" manual developed in 2014 by SV. The plan was created by an administrative working group consisting of a spatial planner, municipal road engineer, technical department manager, and deputy municipal director. It is politically anchored in the municipal planning strategy for 2020–2023. The physical road safety measures included in the plan have been proposed for inclusion in the financial plan. The municipality is to use the plan as a basis for applying for grants under the municipal "50-50%" program for implementing road safety measures. The implementation of non-physical road safety measures is an integral part of the budgets for individual sectors. The working group is responsible for ensuring an annual review and evaluation of the measures included in the plan.

The diagnosis indicated that the municipality has a network of county roads totalling 115 km and municipal roads totalling 87 km. Over 30 years, the municipality has recorded 242 road accidents, resulting in 5 fatalities, 43 serious injuries, and 270 minor injuries. Due to the low annual number of serious accidents (0–4 per year), a detailed accident analysis was not conducted, and no quantitative targets were set in the RTS Plan. Instead, two general objectives were established:

1. The municipality must be approved as a "Safe Traffic Municipality" by 2027.
2. The municipality must improve identified hazardous sections of municipal roads during the planning period.

[250] *Trafikksikkerhetsplan 2023–2027*, Averøy kommune, 2022. www.averoy.kommune.no/_f/p1/i731b37e1-c6c5-49eb-9f31-9ee45667ae5a/vedtatt-utgave-kommunal-trafikksikkerhetsplan-2023-2027.pdf

The evaluation of the previous plan implemented from 2010 to 2014 revealed that not all elements were completed. Tasks related to speed limits, the construction of pedestrian and bicycle paths, and traffic calming near schools and kindergartens were carried out.

Three groups of tasks were planned:

a. non-physical road traffic safety measures as part of the "Safe Traffic Municipality" program,
b. physical safety measures for municipal roads,
c. physical safety measures for county roads,

The municipality is also set to implement a range of measures and procedures aimed at changing attitudes and behaviours in preschools, schools, and municipal agencies. This is intended to influence preschool children, students, parents, guardians, and municipal employees to travel with minimal risk of injury or death.

In the municipality, 18 tasks related to the modernization of intersections, implementation of traffic calming measures, and prevention of road departure have been prepared, with an estimated value of approximately 1.6 million NOK.

The county council is responsible for actions concerning county roads. While the municipality does not have direct control over these roads, it can contribute to proposals for desired measures through its road traffic safety plan. The municipality has prepared 18 tasks for county roads, proposed by its technical department, schools, preschools, social care associations, and private individuals. These tasks include the construction of pedestrian and bicycle paths, measures to prevent road departure, and intersection redesigns, with a total estimated value of over 270 million NOK.

The implementation of the proposed measures is the responsibility of an administrative working group, consisting of a spatial planner, municipal road engineer, technical department manager, and deputy director of the municipality. The working group is required to prepare annual reports on the implemented measures.

Even a general review of the aforementioned requirements and tasks for a Norwegian "Safe Traffic Municipality" reveals that some are also present in the activities of municipalities in Poland, but their effectiveness is limited compared to the organized and comprehensive approach in Norway. Therefore, it is recommended that the National RTS Council in Poland initiate a similar certification program for municipalities. This would align well with the National RTS Program 2030 (NPBRD 2030).

"Heart Zone – Hjertesone"

Ensuring RTS, that is, the elimination of traffic incidents to the extent possible under specific conditions, requires interdisciplinary cooperation among various sectors related to road traffic. While this statement is generally accepted as obvious, it must also consider the additional aspect of fostering a broad culture of RTS. Although there are well-developed organizational frameworks for implementing this culture among professional road users, effective methods for shaping and disseminating it among non-professional users are still being sought.

A primary goal in this regard is to influence ingrained behaviours and thought patterns about road traffic and to promote their change. The result of these efforts and changes should be a better understanding of the road traffic environment and an influence on rational decision-making by its participants. Given that the culture of RTS, especially among non-professional participants, is influenced by the following factors:

- interaction between road users,
- enforcement of traffic regulations by the Police,
- infrastructure that shapes interaction in road traffic,
- economic factors,
- driver training and the standards communicated to future drivers during training,
- characteristics of road users, such as age and experience in the road system,

the measures applied to shape this culture cannot be confined to individual sectors related to road traffic.

A very good example of a practical approach to interdisciplinary treatment of the issue of shaping RTS culture from a young age is the concept of "Heart Zones – Hjertesone." The general idea of such a zone is to designate an area around a school where restrictive traffic regulations are introduced, at least during the times when children are traveling to and from school. [251]

Examples of physical measures used in a "Heart Zone – Hjertesone" include: special "heart zone" signs, designated stopping places for vehicles dropping off children, parking bans, traffic bans, speed limits, physical traffic calming measures, dedicated pedestrian and cycling paths, and dedicated lighting along pedestrian and cycling routes.

The description of "Heart Zones – Hjertesone" above suggests a clear preference for the use of physical measures (traffic organization), but it should be emphasized that other actions encouraging walking or cycling to and from school are also important. Creating such incentives stems from the belief that the practice of parents driving their children to school does not serve their traffic education, as children do not experience the real problems present in road traffic. As future independent road users, children and youth need to learn safe participation in road traffic as early as possible. This is also a goal in the Norwegian "Children's Transport Plan" (Norwegian: *Barnas transportplan*), which states that: *"eight out of ten children, whose distance to school is no more than 4 km, should travel this distance by foot or by bike."*[252]

The first "Hjertesone" (Heart Zone) was established in Norway at the initiative of a school in 2012. Since then, the concept has gained significant popularity. For example, a 2023 survey of 136 municipalities showed that 36% confirmed the establishment of such zones, while 39% were considering their introduction. There is a clear link between having a "Safe Traffic Municipality" certification and the establishment of "Hjertesone" zones—60% of such municipalities also have these zones. Currently, these zones are a national initiative, supported by collaboration between Trygg Trafikk, SV, the Police, the Norwegian Directorate of Health, environmental protection agencies, the National Cyclists' Association, and the Parent Committee for Primary Education.

[251] Uhlving, V. M., Nenseth, V., Ellis, I. O., Egner, L. E., & Nævestad, T.-O. *Kunnskapsgrunnlag om virkninger av Hjertesone*. TØI-rapport, 2014/2024.
[252] https://www.tiltak.no/0-overordnede-virkemidler/0-4-kunnskap-og-verktoey-som-hjelpemidler/barnas-transportplan/ (accessed: August 20, 2024).

Although it is a national initiative, the definition and scope of required actions for "Hjertesone" have not been strictly defined, acknowledging the need to consider the local context of its implementation. However, the following common features of these zones can be note:

- An area around the school is designated as completely or partially free from car traffic during the times when children are arriving at and leaving school.
- The main goal of the initiative is to reduce car traffic by influencing the RTS culture in the area around the school, including parents, students, staff, and other local travellers, and to increase the safety of cycling and walking to school.
- The school with the zone develops a RTS plan.
- It involves a combination of attitude-shaping measures, educational measures, and simple physical measures tailored to the conditions of the specific school.
- It is not a fixed-time project but a continuous process involving both small and large actions implemented over time.
- The greatest impact on the functioning of the zone should come from behavioural and attitude-shaping measures for traffic participants.

The " Heart Zone – Hjertesone" and the associated measures are established by the specific school, ideally in collaboration with parents, students, local authorities, the Police, and other regional and national entities.

According to *Trygg Trafikk*'s recommendations, in addition to designating a traffic-restricted area around the school, the following actions should be undertaken as part of the "Heart Zone – Hjertesone":

1) Training – road safety education should play a central role in the school's daily operations. Students should be prepared to travel to and from school in organized groups or individually. They should practice walking or biking the route from home to school with their parents before traveling alone. Road safety education is a statutory task for schools under the general education requirements.

2) Walking groups – permanent walking groups can be created in neighbourhoods with a high number of students. Children meet every morning at a set time and place, and parents from the neighbourhood take turns safely escorting the group to school. Walking groups can consist of students from the same class, stage, or different age groups. In the first year, adults should accompany the students, but walking groups can continue once students are ready for independent walks. This promotes socialization, physical activity, health benefits, discipline, reduces vehicle traffic, and decreases vehicle emissions.

3) Walking bus – for areas with dispersed student residences, "walking buses" are a suitable solution. The idea is to join a walking group of children at designated pick-up points along the route to school, which are visited at set times. The group walks under the supervision of one or several adults. Walking buses can be organized by activity or class, but routes should follow the natural path to school with stops at students' homes. Similar solutions can be applied for bike travel. It's important to note that the shortest route is not necessarily

the safest. Students should be involved in planning and naming the routes, and creatively marking the stops if needed.

4) **Promotional campaigns for walking and biking –** with the introduction of the "Heart Zone – Hjertesone", it is beneficial to undertake campaigns promoting walking and biking, such as holding a competition with prizes for the class with the highest number of students traveling to school by these methods. Such a competition could last for a week, with designated teachers tracking students' travel methods.

5) **Bicycle day –** *Trygg Trafikk* recommends that children be between 10 and 12 years old before they can ride a bike independently in mixed traffic. Many schools support this recommendation. Therefore, a bicycle day with competitions can be organized for children over 10 years old.

6) **Promotion and use of reflective elements –** there are several ways to promote reflective elements:
    - All students receive reflective vests, and those who use them after a week receive a small reward.
    - A math project where the class tracks the number of students, teachers, and parents using visible reflectors during peak morning hours, whether walking, biking, or arriving from a bus stop or school parking. Results are presented to the whole school, and counts can be repeated later to see if the distributed reflectors are still being used.
    - Students collect all the reflectors they have at home; the class with the largest collection wins. Reflectors are then attached to all autumn and winter jackets, backpacks, and bags.

7) **Mapping School Routes and Student Travel –** Student engagement in creating and operating the "Heart Zone – Hjertesone" is crucial for practical effectiveness. Students can map their routes to and from school, noting the safest, most dangerous, and fastest paths. This mapping should be shared with local authorities. Another form of engagement could be students participating in "before and after" studies of the zone's implementation, recording the number of students walking, biking, using public transport, or being driven by parents.

8) **Play mats representing street networks for preschoolers –** mats (or rugs) with street network designs encourage free play with a traffic theme, aimed at preschool-aged children.

9) **Parking for drop-off –** despite other measures, some younger children will still be driven to school. Therefore, designated parking spaces should be set up to avoid creating queues. These spaces should be clearly marked for drop-off purposes.

10) **Parking procedures –** for school staff parking, organization can enhance road safety. Parking should be organized according to arrival times, starting from the farthest away.

These measures aim to improve road safety around schools and promote safer and more active travel habits among students.

An important role in the functioning of the "Heart Zones – Hjertesone" is played by the Police, who monitor speed, driving under the influence of substances, and the use of safety devices in vehicles transporting children.

Norwegian experience to date indicates that "Hjertesone" zones have a positive impact on road safety culture among parents. Evidence suggests that this measure has led to changes in travel habits among parents and students. Specifically, 16% of parents with children attending schools in these zones report that they drive their children less often than before the zones were introduced. Additionally, 14% believe their children bike more frequently, and 10% state that their children walk to and from school more often.

Annex 2

Table 37. General outline of the procedure for changing permanent traffic organisation

	Poland		Norway	
Internal road	Opinions	None	Opinions	None
	Approval	Road managing entity (landowner)	Approval	Municipality / County road administration / *Statens vegvesen* (SV) [253]
Municipal road	Opinions	Road authority	Opinions	Police only in some cases[254]
	Approval	Starost (county governor)	Approval	Municipality
Country road	Opinions	• Road authority • County Police Commander	Opinions	• Police only in some cases,[255] • Municipality only in some cases[256]
	Approval	Starost (county governor)	Approval	County road administration
Voivodeship road	Opinions	• Road authority, • Voivodeship Police Commander	Not applicable	
	Approval	Voivodeship Marshal		

[253] See: § 5 of the Road Traffic Act of 18 June 1965 (publisher: 2023-12-20-116).

[254] The police provide opinions on changes in traffic organisation related to: priority signs (202-214), signs concerning increasing or decreasing the permissible speed (362-368), no stopping and no parking signs, signs regulating intersection rules only in the cities of Oslo, Bergen, Trondheim, Stavanger, Kristiansand, Tromsø, pedestrian crossing signs, and signs indicating lane changes or reductions. Source: § 26-29 of the Act on Road Signs, Road Markings, Traffic Lights, and Instructions for Their Use of 18 June 1965 (publisher: ZA-2022-12-22-2460).

[255] Ibid.

[256] The local municipality provides opinions on changes in traffic organisation concerning: priority signs (202-214), the establishment of reduced speed zones (speed reductions), no stopping and no parking signs, rules of movement at intersections only in the cities of Oslo, Bergen, Trondheim, Stavanger, Kristiansand, Tromsø, the location of bus stops, and roads for pedestrians and cyclists (508-552). Source: § 26-29 of the Act on Road Signs, Road Markings, Traffic Lights, and Instructions for Their Use of 18 June 1965 (publisher: ZA-2022-12-22-2460).

	Poland		Norway	
National road	Opinions	• Regional Road Authority (GDDKiA) • Voivodeship Police Commander	Opinions	• Police only in some cases,[257] • Municipality only in some cases [258]
	Approval	GDDKiA	Approval	*Statens vegvesen* (SV)
Record keeping of changes in permanent traffic organisation	The record-keeping of approved traffic organisation is managed separately by each traffic management authority on the road		Norwegian Road Data Bank (NVDB)	

Source: own elaboration based on: Norwegian regulations on traffic signs, road markings, traffic signals, and instructions for their application from 18 June 1965 (publication: ZA-2022-12-22-2460), Norwegian Road Traffic Act of 18 June 1965 (publication: 2023-12-20-116), Polish Road Traffic Act of 20 June 1997, and the Regulation of the Minister of Infrastructure of 23 September 2003 on detailed conditions for traffic management on roads and supervision thereof (Journal of Laws 2003 No. 177, item 1729, as amended).

Annex 3

Table 38. Procedure for changing temporary traffic organisation

	Poland		Norway	
Internal road	Opinions	None	Opinions	None
	Approval	Road managing entity (landowner)	Approval	Municipality / County road administration / *Statens vegvesen* (SV)[259]
Municipal road	Opinions	Road authority	Opinions	None
	Approval	Starost (country governor)	Approval	Municipality
Country road	Opinions	• Road authority • Voivodeship Police Commander	Opinions	None
	Approval	Starost (country governor)	Approval	County road administration
Voivodship road	Opinions	• Road authority • Voivodeship Police Commander	Not applicable	

[257] Ibid.
[258] *Planlegging og oppsetting av trafikkskilt. Handbok 046. Statens vegvesen*. February 2009, Oslo, p. 11.
[259] Por.: § 5 ustawy Prawo o ruchu drogowym z dnia 18 czerwca 1965 r. (publikator: 2023-12-20-116)

	Poland		Norway	
	Approval	Voivodeship Marshal		
National road	Opinions	• Regional Road Authority (GDDKiA) • Voivodeship Police Commander	Opinions	None
	Approval	GDDKiA	Approval	*Statens vegvesen* (SV)
Responsibility for signage	• The relevant road management authority. • The contractor performing the roadworks. • The organiser of the event.		• Municipality / County road authority / *Statens vegvesen* (SV). • The contractor ("contractor" or "executing agency"). • The organiser of the event.	
Sanctions for improper roadworks signage	• Notification of the road management authority by the road traffic management body. • Possibility of imposing a fine for improper roadworks signage (Articles 84 and 85 § 1 of the Offences Code).		• Suspension of roadworks by the police or the road management authority. • Revocation of the authority for the person responsible for supervising roadworks in the public road area if they receive two warnings within a year regarding detected violations.	

Source: own elaboration based on: Norwegian regulations regarding road signs, road markings, traffic signals, and their application instructions from June 18, 1965 (publisher: ZA-2022-12-22-2460); Norwegian Road Traffic Act from June 18, 1965 (publisher: 2023-12-20-116); Polish Road Traffic Act from June 20, 1997; Polish Minister of Infrastructure Regulation from September 23, 2003, on detailed conditions for road traffic management and supervision; Polish Offences Code from May 20, 1971.

Annex 4

Table 39. Places for alcohol sales and consumption rules

	Poland	Norway
Fuel stations	Yes – open 24 hours	No – regardless of time, day, or holidays
Food and drink establishments (roadside bars, roadside restaurants, roadside buffets)	Yes – open 24 hours	Yes – with significant time restrictions on serving beverages for Groups I, II, and III; the establishment must be an enclosed building (structure)
Sale, serving, or consumption of alcohol in buses (coaches) by passengers	Yes – alcohol up to 4.5% allowed	No

	Poland	Norway
Sale, serving, or consumption of alcohol in trains (coaches) by passengers	Yes – alcohol up to 4.5% allowed	No
Public places (roads, squares, streets, parks)	No – with possible exceptions by the local municipal council	No
Outdoor events (open air)	Yes – up to 4.5% in designated areas with a ban on bringing in own alcohol	No
Indoor events (enclosed spaces)	Yes – up to 4.5% in designated areas with a ban on bringing in own alcohol	Yes – with the allowance for Group I alcoholic beverages and heightened responsibility for the organizer
Legal consequences for violating the above rules	Fine	• Fine or imprisonment from 6 months to 2 years. • In the case of high-alcohol beverages, imprisonment of up to 2 years.

Source: own elaboration based on: the Polish Prevention of Alcoholism and Promotion of Sobriety Act of 26 October 1982, the Polish Restriction of Trade on Sundays and Holidays and Certain Other Days Act of January 10, 2018, Norwegian Act on Sale of Alcoholic Beverages of June 2, 1989.

Annex 5

Table 40. Criminal court sentencing practices in Poland and Norway (analogous facts)

	Poland	Norway
CASE no. 1: Causing a road accident under the influence of alcohol/narcotics resulting in the death of another road user	• The convicted caused a road accident, resulting in the death of the driver of another vehicle. • The convicted was under the slight influence of amphetamine (27 ng/ml of amphetamine). • The convicted fled the scene of the accident (the appellate court treated this as post-accident shock). **Date of incident:** July 2, 2020	• The convicted caused a road accident, resulting in the death of the driver of another vehicle, and a passenger was injured. • The convicted was under the slight influence of hashish (estimated level of 0.2‰). **Date of incident:** February 3, 2022
Previous convictions of the perpetrator	• Driving ban since 2016. • Prior convictions for driving without a license. • Multiple fines for traffic offenses. • Persistent driving of motor vehicles without a license.	• Driving ban since 2010. • Previously convicted four times for ten instances of driving under the influence of alcohol. • Documented 16 instances of driving without a license.

	Poland	Norway
Verdict issued	• Imprisonment for **4 years and 6 months**. • Driving ban for 8 years. • Total fines, compensations, and damages: PLN 40,000 (NOK 111,667*).	• Imprisonment for 1 year and 10 months. • Lifetime driving ban upheld. • Total fines, compensations, and damages: NOK 190,000 (PLN 68,058*).
Legal basis	• District Court in Wrocław, Criminal Appeal Division IV, Judgment of September 6, 2022, Case No. IV Ka 309/22. • Wrocław-Fabryczna District Court, Criminal Division II, Judgment of December 22, 2021, Case No. II K 92/21.	• Hålogaland Court of Appeal, Judgment LH-2023-21863 (23-021863AST-HALO) of May 10, 2023. • Helgeland District Court, Judgment THEL-2022-149956 of January 12, 2023.
CASE no. 2: Causing a road accident resulting in the death of two people and serious injuries to two others	• The convicted (22 years old) caused a road accident resulting in the death of two people, serious injuries to one passenger, and injuries to another driver. • The convicted was not under the influence of alcohol or other intoxicating substances. • The convicted was carrying handcuffs and pepper spray in the vehicle and displayed aggressive behavior while driving. • The convicted did not hinder police actions. **Date of incident:** March 14, 2021	• The convicted (22 years old) caused a road accident resulting in the death of two people and serious injuries to two other passengers. • The convicted was under the influence of alcohol (0.39 ‰), THC (0.0166 µmol/l), and lamotrigine (1.7 mmol/l). • The convicted had posted pictures of firearms and displayed aggressive behavior while driving. • The convicted hindered police actions. **Date of incident:** March 9, 2021
Previous convictions of the perpetrator	None	None
Verdict issued	• Imprisonment for a period of **5 years**. • Driving ban for 10 years. • Fines, compensation, and damages awarded: 96,000 PLN (268,006 NOK*).	• Imprisonment for a period of **1 year and 7 months,** • Lifetime driving ban. • Fines, compensation, and damages awarded: 610,000 NOK (218,502 PLN*).
Legal basis	• Judgment of the District Court in Nowy Sącz, Criminal Division II, dated April 5, 2023, reference number II Ka 637/22. • Judgment of the Regional Court in Nowy Sącz, Criminal Division II, dated September 22, 2022, reference number II K 1159/21.	• Judgment of the District Court in Vestre Finnmark, TVFI-2022-139962 (22-139962MED-TVFI/TALT), dated March 1, 2023.

	Poland	Norway
CASE no. 3: Driving under the influence of alcohol without causing a road accident	• The convicted individual was driving a motor vehicle under the influence of alcohol. • Blood alcohol level: 1.97‰, • Detained during a routine police check (no road accident occurred), • The driver entered the vehicle after consuming a 0.5-litre bottle of vodka. **Date of incident:** April 5, 2021.	• The convicted individual was driving a motor vehicle under the influence of alcohol. • Blood alcohol level: 2.49‰. • Detained during a routine police check (no road accident occurred). • The driver entered the vehicle after consuming a 0.7-litre bottle of vodka. **Date of incident:** September 21, 2016
Previous convictions of the perpetrator	None	None
Verdict issued	• No imprisonment. • Driving ban for a period of 3 years. • Fines and penalties awarded: 6,500 PLN (18,146 NOK*).	• Imprisonment for a period of **24 days**. • Driving ban for a period of 2 years. • Fines and penalties awarded: 52,000 NOK (18,626 PLN*) with the possibility of automatic alternative conversion to imprisonment for 15 days.
Legal basis	• Judgment of the Regional Court in Pruszków, Criminal Division II, dated October 28, 2022, reference number II K 981/22. • Judgment of the District Court in Warsaw, Criminal Division X, Appeals Division, dated February 21, 2023, reference number X Ka 21/23.	• Judgment of the District Court in Nedre Romerike, TNERO-2016-151597, dated June 12, 2017. • Judgment of the Court of Appeal in Eidsivating, LE-2017-105346 (17-105346AST-ELAG/), dated February 9, 2018.
CASE no. 4: Violation of right of way rules – causing a road accident	• The convicted individual violated the right of way by turning into a driveway from a public road and collided with a motorcyclist driving straight on the roadway (failure to yield to the motorcyclist). • The victim suffered extensive severe injuries as a result of the road accident. • The driver was sober. **Date of incident:** April 9, 2018.	• The convicted individual violated the right of way and struck a pedestrian crossing at a pedestrian crossing with a traffic light (the pedestrian had the green light). • The victim suffered extensive severe injuries as a result of the road accident. • The driver was sober. **Date of incident:** October 13, 2015
Previous convictions of the perpetrator	None	None
Verdict issued	• No imprisonment. • No driving ban imposed. • Fines and compensations awarded: 18,000 PLN (50,251 NOK*).	• Imprisonment for a period of **18 days**, suspended for a probationary period of 2 years. • No driving ban imposed. • Fines and compensations awarded: 125,000 NOK (44,775 PLN*).

	Poland	Norway
Legal basis	• Judgment of the District Court for Warsaw Praga – South, Criminal Appeals Division VI, dated February 28, 2022, reference number VI Ka 5/21. • Judgment of the District Court for Warsaw Praga – South, dated July 16, 2020, reference number III K 640/18.	• Judgment of the District Court in Oslo, TOSLO-2017-132897 (17-132897MED-OTIR/07), dated December 13, 2017.
CASE no. 5: Loss of vehicle control, entering the opposite lane, causing a road accident	• The convicted driver suddenly entered the opposite lane, and while trying to avoid a collision, skidded and overturned. • The injured driver (in a car) sustained injuries due to the need to make sudden defensive manoeuvres. • The driver was sober. **Date of incident:** November 19, 2018.	• The convicted driver suddenly entered the opposite lane. • The injured driver (on a motorcycle) sustained injuries due to the need to make sudden defensive manoeuvres. • The driver was sober. **Date of incident:** June 7, 2023.
Previous convictions of the perpetrator	None	None
Verdict issued	• Conditional discontinuation of criminal proceedings for a probationary period of 1 year. • No driving ban imposed. • Fines and compensations awarded: 2,000 PLN (5,583 NOK*).	• Imprisonment for a period of **21 days**, suspended for a probationary period of 2 years. • Driving ban for 18 months. • Fines and compensations awarded: 140,000 NOK (50,148 PLN*).
Legal basis	• Judgment of the District Court in Kozienice, Criminal Division II, dated July 11, 2019, reference number II K 244/19.	• Judgment of the District Court in Buskerud, dated April 16, 2024, reference number TBUS-2024-28913 (24-028913MED-TBUS/TNES).

*** Conversion based on the average exchange rate published by the National Bank of Poland as of 26 July 2024, rounded to +/- 1 PLN.**

Source: own elaboration based on court rulings.

Annex 6

Table 41. Monitoring indicators for national RTS programmes in Poland and Norway – detailed

No.	Priority / intervention area in the programme	Poland	Norway
1	Speed	• Percentage of vehicles complying with speed limits. • Number of road accident victims due to "failure to adjust speed to road conditions". *Status measures*: • No quantitative measures related to compliance with speed limits. • Number of road accident victims caused by failure to adjust speed to road conditions by 2030 shall not exceed 385 fatalities and no more than 1,214 seriously injured.	• Value of the 85th percentile speed of vehicles travelling at various speed limits (speed limits of 50 km/h, 60 km/h, 70 km/h, 80 km/h, 100 km/h, and 110 km/h), • Percentage of vehicles exceeding speed limits by 10 km/h, 20 km/h, and 30 km/h. • Percentage of fatal accidents where high speed was likely a contributing factor. ***Status measure:*** By 2026, 72% of vehicles will comply with speed limits.
2	Use of seatbelts and child restraint systems	Percentage of vehicle users correctly using seatbelts or child restraint systems. Indicators are planned to be defined as part of the European TRENDLINE Project. *	• Percentage of fatalities in cars involving individuals who were not wearing seatbelts. • Seatbelt usage in light passenger vehicles (divided into drivers, front seat passengers, and rear seat passengers). • Seatbelt usage in light passenger vehicles (only drivers and front seat passengers), divided into densely built-up areas and areas outside built-up zones. • Seatbelt usage among bus passengers. • Rear-facing child seat use, divided into children up to 1 year, 2 years, and 3 years. ***Status measures:*** By 2026, 98.5% of all drivers and front seat passengers in light vehicles will wear seatbelts; 95% of all truck drivers will wear seatbelts; 75% of all children aged 1–3 years will be secured in rear-facing child seats; 85% of all children aged 1–8 years will be properly secured in cars.
3	Driving under the influence of intoxicants, including alcohol	• Percentage of drivers operating vehicles within the legal limits of blood alcohol concentration. • Number of victims in accidents caused by road users under the influence of alcohol (victims/year).	• Percentage of fatal accidents where driving under the influence of intoxicants was the probable cause, • Results from police control weeks, with a focus on driving under the influence of drugs (week 23 and week 50),

No.	Priority / intervention area in the programme	Poland	Norway
		Status measures: By 2030, the number of road accident victims caused by road users under the influence of alcohol should not exceed 133 fatalities and no more than 442 seriously injured.	• Results from police investigations into driving under the influence of alcohol. ***Status measures:*** By 2026, a maximum of: 0.1% of transport work (vehicle-kilometres) will be carried out under the influence of alcohol above 0.2‰; 0.4% of transport work (vehicle-kilometres) will be carried out under the influence of drugs above the criminal liability limit.
4	Distraction	Percentage of drivers not using handheld mobile devices. Indicators planned to be defined as part of the European TRENDLINE Project. *	Reduction in the number of accidents caused by distraction. ***Status measure:*** No quantitative measure, qualitative assessment of continued actions.
5	Child protection (Aged 0-14)	No dedicated indicators.	• Number of kindergartens that received the "Safe Kindergarten" certificate, • Number of schools that received the "Safe School" certificate. ***Status measure:*** From 2022–2025, no more than an average of 15 fatalities and serious injuries per year in the children's age group.
6	Young and young drivers	No dedicated indicators.	Average risk of death or serious injury. ***Status measure:*** In the years 2022–2025, the average risk of death or serious injury for drivers aged 18 and 19 must be 25% lower than the average for 2018 and 2019.
7	Older road users	Number of RTS workshops conducted under the general priority "Safe Person". ***Status measures:*** Number of workshops conducted – 50 in 2023, 14 in 2024, 32 in 2025.	Average risk of death or serious injury. ***Status measures:*** From 2022–2025, on average: the number of fatalities or seriously injured drivers aged 75+ must be 25% lower than in 2018 and 2019 (calculated per kilometres driven); the number of fatalities or seriously injured pedestrians aged 75+ must be 25% lower than in 2018 and 2019 (calculated per distance walked in km).
8	Pedestrians and cyclists	• Number of pedestrians as road accident victims (victims/year). • Number of cyclists as road accident victims (victims/year). ***Status measures:***	• Number of kilometres of national roads specifically adapted for pedestrians and cyclists (divided into urban and rural areas). • Number of kilometres of county roads specifically adapted for pedestrians and cyclists (divided into urban and rural areas). • Use of bicycle helmets, broken down by age groups below 12 years, 12–17 years, and above 17 years. • Use of yellow bicycle jackets/reflective vests by cyclists.

No.	Priority / intervention area in the programme	Poland	Norway
		• Pedestrians: By 2030, no more than 397 fatalities and no more than 1237 seriously injured. • Cyclists: By 2030, no more than 129 fatalities and no more than 686 seriously injured.	• Use of bicycle lights by cyclists during night-time. • Use of reflective elements by pedestrians on lit roads at night (divided into rural and urban areas). *State measures:* • From 2022–2025, the average risk of death or serious injury for pedestrians and cyclists must be 25% lower than in 2018 and 2019 (calculated per distance travelled in km), • By 2026: 75% of cyclists will use helmets; 53% of pedestrians will use reflectors on lit roads at night.
9	Motorcyclists and moped riders	• Number of moped riders and motorcyclists as road accident victims (victims/year), • Percentage of motorcyclists, moped riders, and cyclists wearing protective helmets. ***Status measures:*** By 2030, no more than 191 fatalities and no more than 758 seriously injured.	Average risk of death or serious injury. ***Status measures:*** From 2022–2025, the average risk of death or serious injury for moped riders, light motorcycles, and heavy motorcycles must be 25% lower than in 2017–2020 (calculated per passenger-kilometres).
10	Road freight transport	No direct reference to such a broadly defined priority.	• Proportion of trucks with a permissible total weight > 3.5 t without 2 or 3 defects during periodic vehicle inspections, divided into trucks and "heavy" trailers (semi-trailers, heavy-duty towables, etc.). • Proportion of inspected trucks with significant defects. • Percentage of inspected heavy vehicle drivers complying with regulations on driving time and rest during work. ***Status measures:*** By 2026, at least 30% of all trucks with a permissible total weight > 3.5 t and at least 45% of all vans with a permissible total weight ≤ 3.5 t will have no 2 or 3 defects during periodic inspections.
11	Head-on collisions and run-off-road crashes	• Number of fatalities in head-on collisions (victims/year) – provided in item 13. • Number of fatalities in crashes ending in vehicles running off the road (victims/year) – provided in item 13; • Number of km of newly constructed A and S road sections. ***Status measures:*** Achieving the length of A and S road networks: 5,176.2 km in 2023, 5,305.6 km in 2024, 5,767.9 km in 2025.	Head-on collisions: • Number of km of four-lane motorways and expressways, • Number of km of 2/3-lane roads with separated traffic flows, • Number of km with enhanced central markings in the national road network, • Number of km with enhanced central markings in the county road network.

No.	Priority / intervention area in the programme	Poland	Norway
			Run-off-road crashes: • Number of km of national roads with a speed limit ≥ 70 km/h that have been upgraded to meet minimum technical standards to prevent serious run-off-road crashes, • Number of km of county roads with a speed limit ≥ 70 km/h that have been upgraded to meet minimum technical standards to prevent serious run-off-road crashes. ***Status measures:*** By 1 January 2028, 60% of traffic on national roads with speed limits ≥ 70 km/h must occur on roads with separated traffic directions.
12	Road operation and maintenance	No direct reference to such a broadly defined priority.	No quantitative indicators. General indication of ongoing tasks related to road operation and maintenance.
13	Road infrastructure	a) Percentage of distance travelled on roads with safety ratings above agreed thresholds (alternatively, percentage of distance travelled on roads with either separated traffic directions (barriers or lanes) or reduced permissible speeds to agreed maximum values), b) Number of fatalities in head-on collisions (victims/year), c) Number of fatalities in side and rear collisions (victims/year), d) Number of fatalities in crashes ending in vehicles running off the road (victims/year), e) Number of fatalities at intersections and junctions (victims/year), f) Number of fatalities on horizontal curves (victims/year), g) Number of fatalities at night (victims/year), h) Length of completed road widening/reconstruction projects including realignment [km], i) Number of completed road engineering infrastructure projects (bridges, culverts) [items], j) Number of completed investment tasks improving RTS under the Safe Road Infrastructure Program 2021–2024 [items], k) Number of bypasses opened to traffic in a given year [items],	There is no direct reference to such a broadly defined priority. It is indirectly addressed through indicators related to: • Pedestrians and cyclists – item 8. • Specific types of accidents – item 11.

No.	Priority / intervention area in the programme	Poland	Norway
		l) Number of installed nets between gaps in engineering structures [items], m) Number of new stationary emergency communication devices [items], n) Number of removed excessive road signs from national roads [items]. *Status measures:* a) By 2030, no more than 293 fatalities and no more than 747 seriously injured. b) By 2030, no more than 384 fatalities and no more than 1,988 seriously injured. c) By 2030, no more than 237 fatalities and no more than 497 seriously injured. d) By 2030, no more than 243 fatalities and no more than 1,491 seriously injured. e) By 2030, no more than 259 fatalities and no more than 693 seriously injured. f) g) By 2030, no more than 512 fatalities and no more than 1,290 seriously injured. g) 47.4 km in 2023, 116 km in 2024, 157 km in 2025. h) 12 items in 2023, 9 items in 2024, 5 items in 2025. i) 219 items in 2023, 485 items in 2024. j) 3 items in 2024, 11 items in 2025. k) 126 items in 2023, 116 items in 2024, 165 items in 2025. l) 30 items in 2024, 92 items in 2025. m) 9,000 items in 2025.	
14	Vehicle safety	• Percentage of vehicles meeting specified minimum safety standards for active and passive safety systems (alternatively – percentage of vehicles not exceeding a specified age). • Number of fatalities in accidents caused by vehicle malfunctions (victims/year). ***Status measures*:** By 2030, no more than 3 fatalities and no more than 7 seriously injured.	No direct reference to such a broadly defined priority.

No.	Priority / intervention area in the programme	Poland	Norway
15	Utilisation of new Technologies	No direct reference to such a broadly defined priority.	No quantitative indicators. General recommendation for intensive involvement in ITS development.
16	Activities for RTS in private and public organizations/enterprises	No direct reference to such a broadly defined priority.	Public organizations: • Number of municipalities with an active RTS plan. • Number of municipalities certified as "Safe in Road Traffic." Private enterprises: • Number of companies certified according to RTS standard NS-ISO 39001. ***State measures*:** By January 1, 2026, at least 200 municipalities will be certified as "Safe in Road Traffic." Efforts will be made to have as many counties (towns) as possible certified as "County Safe in Road Traffic."
17	Emergency services and post-accident care	• Time (in minutes and seconds) from emergency notification to the arrival of rescue services at the accident site. • Number of emergency departments. • Number of pre-hospital landing sites. • Number of medical dispatch centres. • Number of new emergency ambulances. ***State measures by 2030***: 250 emergency departments, 270 pre-hospital landing sites; 18 medical dispatch centres; 1000 new emergency ambulances.	No direct reference to such a broadly defined priority.
18	Knowledge base on RTS	No direct reference to such a broadly defined priority.	No quantitative measures. Qualitative measures: Updating and acquiring new knowledge to set priorities in the new RTS program; development of injury registration systems for road accidents; updating risk forecasting tools.

* TRENDLINE is a European Union project focused on setting indicators for RTS (trendlineproject.eu).

Source: own elaboration based on: *Nasjonal tiltaksplan for trafikksikkerhet på vei 2022–2025*, *Narodowy Program Bezpieczeństwa Ruchu drogowego 2021–2030, Program realizacyjny na lata 2024-2025* for *Narodowy Program Bezpieczeństwa Ruchu Drogowego 2021-2030*.

Annex 7

International legal provisions:

- Convention on Road Traffic. Protocol on Road Signs and Signals and Final Act Signed in Geneva on 19 September 1949.

Polish legal provisions (with publisher):

- Administrative Procedure Code Act of 14 June 1960 (Journal of Laws 2024, item 572 consolidated text).
- Offences Code of 20 May 1971 (Journal of Laws 2023, item 2119, consolidated text).
- Prevention of Alcoholism and Promotion of Sobriety Act of 26 October 1982 (Journal of Laws 2023, item 2151, consolidated text).
- Public Roads Act of 21 March 1985 (Journal of Laws 2024, item 320 consolidated text).
- Police Act of 6 April 1990 (Journal of Laws 2024, item 145 consolidated text).
- Penal Code of 6 June 1997 (Journal of Laws 2024, item 17, consolidated text).
- Code of Criminal Procedure of 6 June 1997 (Journal of Laws 2024, item 37, consolidated text).
- Road Traffic Law of 6 June 1997 (Journal of Laws 2023, item 1047 consolidated text).
- Code of Offences Procedure of 24 August 2001 (Journal of Laws 2024, item 977, consolidated text).
- Road Transport Act of 6 September 2001 (Journal of Laws 2024, item 728).
- Vehicle Drivers Act of 5 January 2011 (Journal of Laws 2023, item 622, consolidated text).
- Restriction of Trade on Sundays and Public Holidays Act of 10 January 2018 (Journal of Laws 2023, item 2151, consolidated text).
- Act of 2 December 2021 amending the Act on Road Traffic and certain other acts (Journal of Laws 2021, item 2328).
- Whistleblower Protection Act of 14 June 2024 (Journal of Laws 2024, item 928).
- Regulation of the Prime Minister of 22 February 2002 on Imposing Fines Through Penal Orders (Journal of Laws 2017, item 613 consolidated text).
- Regulation of the Minister of Infrastructure of 3 July 2003 on Detailed Technical Conditions for Road Signs and Signals, Road Safety Devices, and the Conditions for Their Placement on Roads (Journal of Laws 2019, item 2311 consolidated text).
- Regulation of the Minister of Infrastructure of 23 September 2003 on Detailed Conditions for Traffic Management on Roads and Supervision of Such Management (Journal of Laws 2017, item 784 consolidated text).
- Regulation of the Prime Minister of 24 November 2003 on the Amount of Fines Imposed by Penalty Tickets for Selected Types of Offenses (Journal of Laws 2013, item 1624, consolidated text).
- Regulation of the Minister of National Education of 27 August 2012 on the Core Curriculum for Preschool Education and General Education in Different Types of Schools (Journal of Laws 2012, item 977).
- Regulation of the Minister of Transport, Construction, and Maritime Economy of 14 September 2012 on Training and the Model Certificate for Road Safety Auditors (Journal of Laws 2012, item 1079).
- Regulation of the Minister of Infrastructure and Development of 20 October 2015 on the Technical Conditions for Railway Line Crossings and Railway Sidings with Roads and Their Location (Journal of Laws 2015, item 1744).
- Regulation of the Minister of Infrastructure of 24 June 2022 on Technical and Construction Regulations for Public Roads (Journal of Laws 2022, item 1518).

- Regulation of the Minister of Health of 5 December 2022 on Medical Examinations for Individuals Seeking Vehicle Driving Licenses and Drivers (Journal of Laws 2022, item 2503).
- Regulation of the Minister of the Interior and Administration of 14 September 2023 on the Registration of Vehicle Drivers Violating Traffic Regulations (Journal of Laws 2023, item 622, consolidated text).
- Regulation of the Minister of Infrastructure of 28 May 2024 on the Assessment of Accident Risk and the Severity of Their Consequences, and Road Traffic Safety Categories (Journal of Laws 2024, item 840).
- Resolution No. 538/17 of the Toruń City Council of 23 February 2017 (item 920; Official Journal of the Kuyavian-Pomeranian Voivodeship).
- Order No. 58/2011 of the General Inspector of Road Transport of 15 December 2011 on the Organizational Regulations of the General Inspectorate of Road Transport (Official Journal of the Ministry of Transport, Building and Maritime Economy 2011, item 1.4).
- Order No. 31 of the Chief Commander of the Police of 22 October 2015 on Methods and Forms of Statistical Data Collection on Road Traffic Incidents by the Police (Official Journal of the Chief Commander of the Police 2015, item 85).
- Order No. 2 of the Chief Commander of the Police of 1 April 2016 on the Regulations of the Chief Commander of the Police (Official Journal of the Chief Commander of the Police 2016.13; Official Journal of the Chief Commander of the Police 2024, item 11).

Norwegian legal provisions (with publisher):

- Road Traffic Act of 21 June 1963 (publisher: ZA-2021-05-07-34).
- Act on Road Signs, Road Markings, Traffic Lights, and Instructions for Their Use of 18 June 1965 (publisher: ZA-2022-12-22-2460).
- Road Traffic Act of 18 June 1965 (publisher: ZA-2023-12-20-116).
- Act on Limitation of Claims of 18 May 1979 (publisher: ZA-2020-12-18-146).
- Act on the Use of Personal Protective Equipment While Driving a Motor Vehicle of 1 October 1979 (publisher: ZA-2023-07-03-1228).
- Act on Criminal Procedure of 22 May 1981 (publisher: ZA-2024-05-31-25).
- Act on Road and Pedestrian Traffic of 21 March 1986 (publisher: ZA-2022-06-17-1049).
- Act on the Sale of Alcoholic Beverages of June 2 1989 (publisher: ZA-2021-05-07-34).
- Act on On-the-Spot Fines for Traffic Offenses of 29 June 1990 (publisher: ZA-2024-01-26-119).
- Act on Enforcement of 26 June 1992 (publisher: ZA-2023-12-20-110).
- Act on the Police of 4 August 1995 (publisher: ZA-2024-05-31-25).
- Act on Penalty Points of 19 September 2003 (publisher: ZA-2020.12.11.2699).
- Act on the Loss of Motor Vehicle Driving Licenses of 19 December 2003 (publisher: ZA-2023-10-18-1646).
- Act on Driving Licenses of 19 January 2004 (publisher: ZA-2024-04-16-641).
- Act on Traffic Training Regulations of 1 October 2004 (publisher: ZA-2024-06-20-1186).
- Penal Code Act of 20 May 2005 (publisher: ZA-2024-05-31-25).
- Act on the National Enforcement Agency (SI) of 11 January 2013 (publisher: ZA-2022-12-20-109).
- Act on Intelligent Transport Systems (ITS) in Road Transport of 11 December 2015 (publisher: ZA-2015-12-11-101).
- Statute of the National RTS Council (*Trygg Trafikk*) of 24 January 1957 (version of 22 April 2008).

Judicial decisions of Polish courts:

- Supreme Court judgment of 4 December 2013 (III KK 298/13).

- Judgment of the Provincial Administrative Court in Bydgoszcz of 16 January 2018, Case No. II SA/Bd 796/17.
- Judgment of the District Court in Kozienice, Second Criminal Division, of 11 July 2019, Case No. II K 244/19.
- Judgment of the District Court for Warsaw Praga-Południe, of 16 July 2020, Case No. III K 640/18.
- Judgment of the Supreme Administrative Court in Warsaw of 3 August 2021, Case No. II GSK 1389/18.
- Judgment of the District Court for Wrocław-Fabryczna, Second Criminal Division, in Wrocław, of 22 December 2021, Case No. II K 92/21.
- Judgment of the District Court for Warsaw Praga-Południe, Sixth Criminal Appeal Division, of 28 February 2022, Case No. VI Ka 5/21.
- Judgment of the District Court in Wrocław, Fourth Criminal Appeal Division, of 6 September 2022, Case No. IV Ka 309/22.
- Judgment of the District Court in Nowy Sącz, Second Criminal Division, of 22 September 2022, Case No. II K 1159/21.
- Judgment of the District Court in Pruszków, Second Criminal Division, of 28 October 2022, Case No. II K 981/22.
- Judgment of the District Court in Warsaw, Tenth Criminal Appeal Division, of 21 February 2023, Case No. X Ka 21/23.
- Judgment of the District Court in Nowy Sącz, Second Criminal Division, of 5 April 2023, Case No. II Ka 637/22.
- Decision of the District Court for Warsaw – Śródmieście, Criminal Division II, of 31 January 2023, reference II Kp 1610/22.
- Decision of the District Prosecutor's Office in Warsaw of 23 June 2023, reference 3041-5.Dsn.1235.2023.

Judicial decision of Norwegian courts:

- Judgment of the Supreme Court of 15 January 2008, Case No. HR-2008-64A-Rt-2008-44.
- Judgment of the Norwegian Supreme Court of 13 May 2022, HR-2022-981-A (Case No. 21-162994STR-HRET).
- Judgment of the Norwegian Supreme Court of 13 September 2022, HR-2022-1753-A (Case No. 22-020057STR-HRET).
- Judgment of the District Court in Nedre Romerike TNERO-2016-151597 of 12 June 2017.
- Judgment of the Court of Appeal in Gulating of 12 September 2017 (LG-2017-35089), modifying the judgment of the District Court in Bergen (TBERG-2016-182213).
- Judgment of the District Court in Oslo TOSLO-2017-132897 (17-132897MED-OTIR/07) of 13 December 2017.
- Judgment of the Court of Appeal in Eidsivating LE-2017-105346 (17-105346AST-ELAG/) of 9 February 2018.
- Judgment of the Court of Appeal in Hålogaland LH-2023-21863 (23-021863AST-HALO) of 10 May 2023.
- Judgment of the District Court in Vestre Finnmark TVFI-2022-139962 (22-139962MED-TVFI/TALT) of 1 March 2023.
- Judgment of the District Court in Helgeland THEL-2022-149956 of 12 January 2023.
- Judgment of the District Court in Buskerud of 16 April 2024, Case No. TBUS-2024-28913 (24-028913MED-TBUS/TNES).

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