



**pwc**

# Destination 2030:

A guide to improving road safety  
governance





# Foreword

Every day 3,200 people die on the world's roads, with road traffic crashes being the leading cause of death globally for people between the ages of 5 and 29 years<sup>1</sup>. That is nearly three times the number of deaths from intentional homicide<sup>2</sup>. And up to 137,000 people per day suffer a non-fatal injury on the road, underscoring the burden of road traffic accidents on overall public safety<sup>3</sup>.

While road traffic crashes bring both physical and emotional harm, they also have an impact on the economy at large and can jeopardise the financial stability for the families left behind. For example, each year 20% of widows globally (approximately 52 million women)<sup>4</sup> will have lost spouses as a result of a road death. This human tragedy can be financially devastating, especially where the spouse was the main household income provider.

Global governance bodies have long recognised the urgent need to reduce road deaths. The United Nations Sustainable Development Goals included a target to halve road traffic deaths by 2020<sup>5</sup>. Unfortunately, despite encouraging progress by some countries, this target was not met. Consequently, the deadline has been extended to 2030, and 2021-2030 has been declared a Decade of Action on Road Safety<sup>6</sup>.

One of the most promising developments in this effort is the adoption of the Safe Systems Approach<sup>7</sup> to road safety. This approach shifts responsibility for road safety from the individual road users to all parties designing and operating the transport system, and with this is a need to institutionalise a culture of collective responsibility and a willingness to surrender a level of autonomy.







The World Bank<sup>8</sup> and other governing bodies have issued guidance on the governance arrangements necessary to deliver on these goals. Despite this, poor governance is still identified as a significant challenge. For example, in 2019 the Australian Government published a review of their national road safety governance arrangements, recognising that existing organisational and governance structures were insufficient to deliver on road safety commitments<sup>9</sup>.

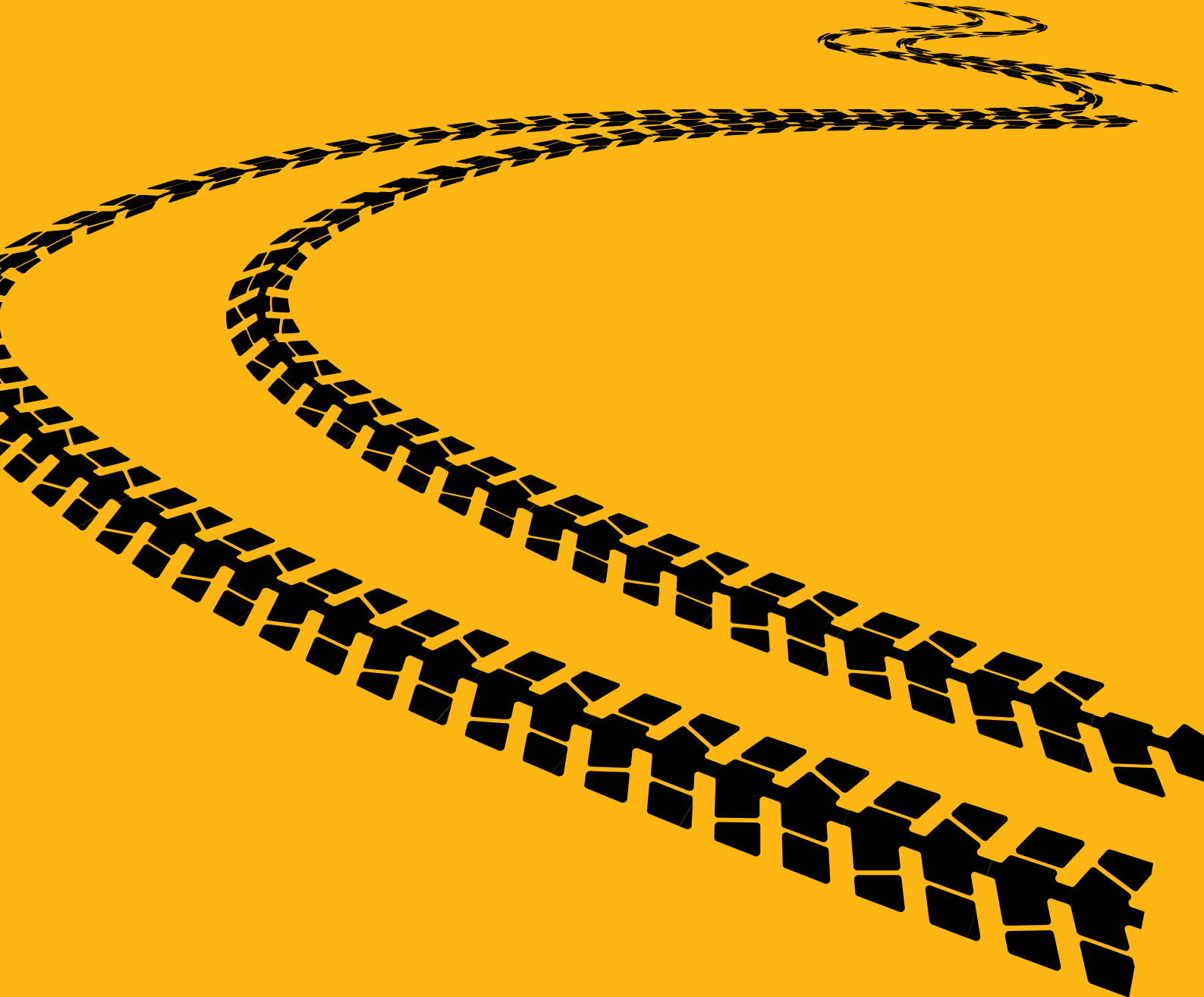
This report will help governments assess their own arrangements, ensuring that they are fit for the important purpose of mainstreaming road safety, and delivering on the Sustainable Development Goal target to halve road deaths by 2030.

At the heart of our approach is PwC Middle East's ALI(i)GN framework which identifies the key elements of an effective road safety governance system. It enables policymakers to tailor it to their specific circumstances, assess and design their arrangements, and adapt and scale as required on both local and national levels.

This could involve following the example of some countries that have institutionalised road safety functions within dedicated agencies, rather than relying purely on committee structures. Regardless of the arrangements, it is crucial for all parties to recognise that reducing road deaths requires collective responsibility and coordinated action. This goal cannot be achieved by structures alone; it requires the commitment and collaborative efforts of everyone working across the road safety ecosystem. Our ALI(i)GN framework provides an effective governance architecture to holistically empower all the professionals involved to deliver the Safe System Approach, and reduce road traffic deaths. Lives, quite literally, depend on it.

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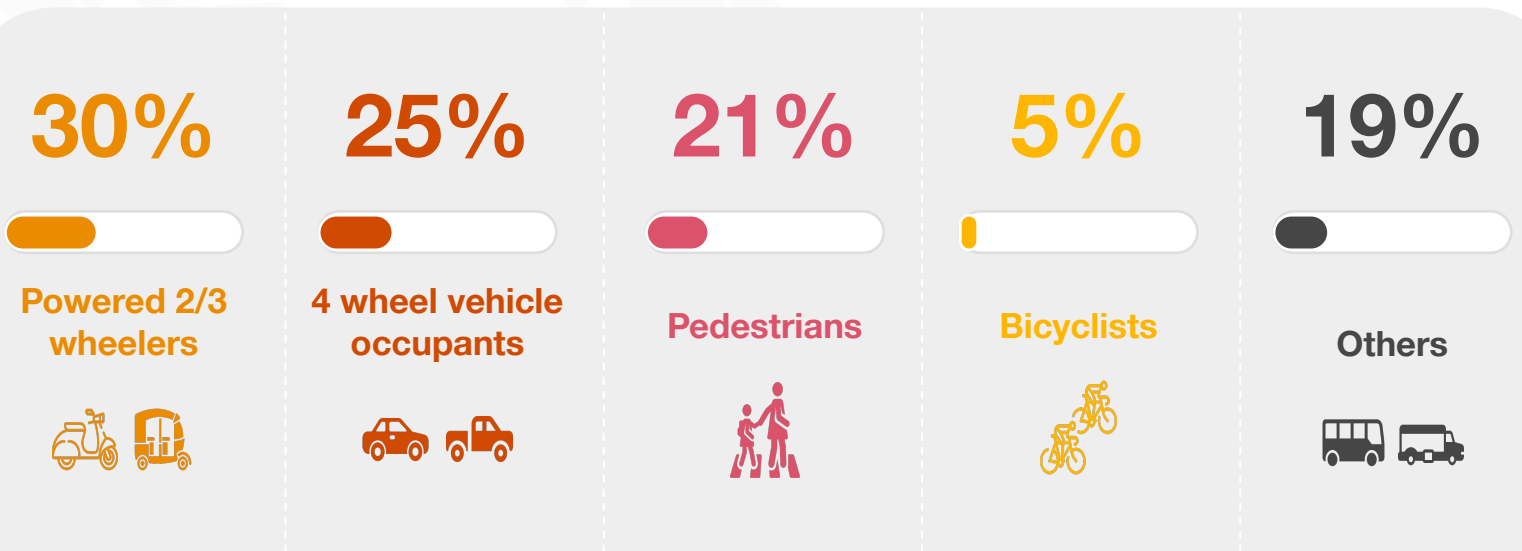
# The context

## The context

### More to be done: global road traffic fatalities

According to the World Health Organisation (WHO), road traffic crashes result in approximately 1.19 million deaths annually and leave between 20 and 50 million people with non-fatal injuries. This translates to more than two deaths occurring per minute and over 3,200 per day<sup>10</sup>.

Global fatality rates by road user types, WHO 2021



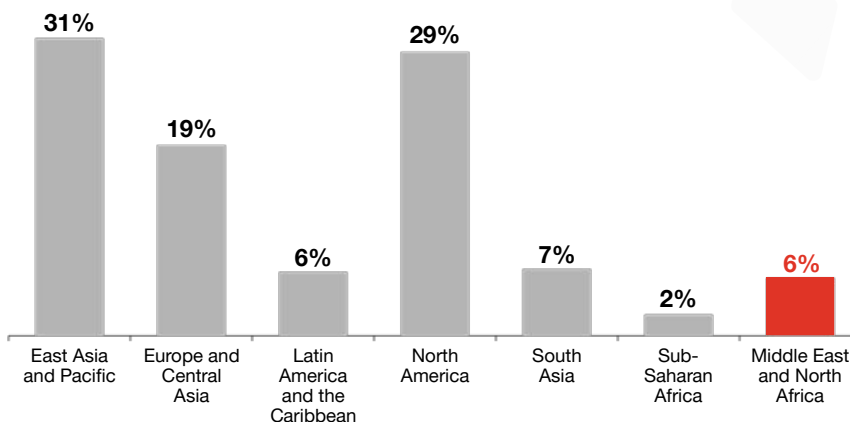
Source: Global Status Report on Road Safety 2023<sup>11</sup>

A significant portion of these fatalities occur among vulnerable road users such as pedestrians, cyclists, and motorcyclists. Notably, road traffic injuries are the leading cause of death for people under 30 years of age<sup>12</sup>.

### The economic impact

Deaths and serious injuries at this scale can bring with them almost inconceivable levels of loss and suffering, which in turn can result in generational harm. There is also a significant economic impact. A recent study estimates that between 2015 and 2030, road injuries will cost the world economy US\$1.8 trillion, resulting from a combination of diverted healthcare expenditures that could otherwise have been used for savings or investment and losses in employment due to mortality and morbidity<sup>13</sup>.

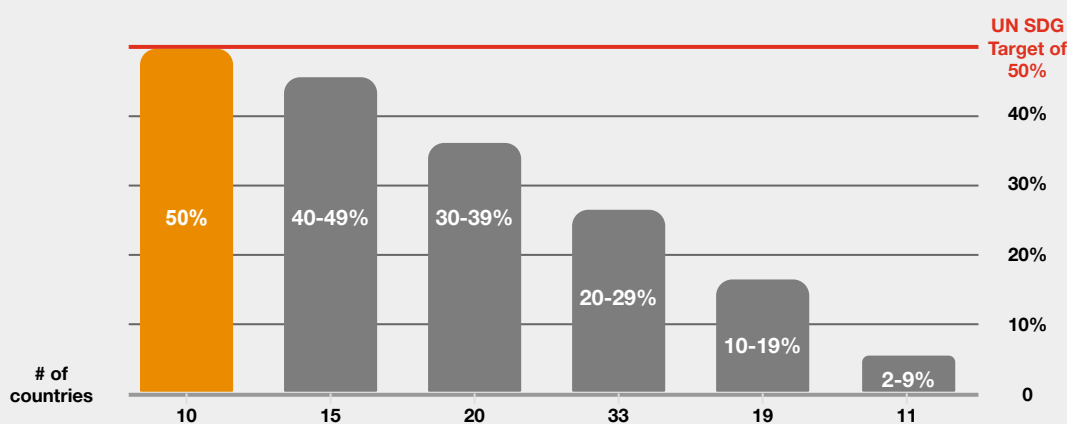
Economic loss 2015-30 as a percentage of the global burden



## Progress in reducing road deaths

Since 2010, road traffic deaths have fallen by 5% globally<sup>14</sup>, despite the United Nations setting a Sustainable Development Goals (SDG) target to halve the number of road traffic deaths by 2020. Whilst 108 countries reported a decline in road traffic deaths from 2010 to 2021<sup>15</sup>, this was nowhere near enough to deliver on this SDG target. However, 10 countries did manage to deliver a 50% reduction over this period, and in doing so demonstrated that the target was achievable<sup>16</sup>.

### Leading by example: 10 countries succeeded in reducing road traffic deaths by over 50%, 2023



Source: Global Status Report on Road Safety 2023<sup>16</sup>

The United Arab Emirates was one of those 10, topping the performance table for GCC countries, and successfully achieving this through a combination of improved infrastructure, stricter traffic laws, public awareness campaigns, advanced technologies, and enhanced emergency response<sup>17 18</sup>. And in Dubai, the Traffic Safety Strategy led by the Roads and Transport Authority (RTA) achieved a reduction in the traffic fatality rate by 93% between 2007 and 2023: a significant step towards the RTA's Zero Fatalities vision<sup>19</sup>.

The Kingdom of Saudi Arabia has also made positive progress, achieving a 35% decline in road traffic fatalities over the past five years despite large increases in the volume of traffic on the roads<sup>20</sup>.

Whilst encouraging, these substantial reductions have not been replicated across the whole region, with road traffic deaths remaining a leading cause of death for young people<sup>21</sup>.

Despite advances in technology and improvements to infrastructure, the complexity of factors contributing to road safety requires a multifaceted approach, and getting agencies to align their efforts to inform the design and execution of comprehensive strategies should be a regional priority.

## Destination 2030

The World Health Organisation (WHO) is widely recognised to be the leading international agency for road safety. By declaring 2021-2030 a Decade of Action on Road Safety<sup>22</sup>, the WHO has reinforced the direction for governments to reduce road traffic deaths and injuries by at least 50%, in line with the targets of the 2030 Agenda for Sustainable Development<sup>23</sup>.

The achievement of this target will depend almost exclusively on the efforts of national and local governments, through the design and delivery of a comprehensive and integrated approach that tackles the prevention, mitigation, and management of road safety. It must involve the collaborative effort and awareness of various sectors, including law enforcement, health authorities, urban planning, and transportation. The success of some countries offers valuable experience from which we can draw, but we must all redouble our efforts collectively to reduce the number of lives unnecessarily lost on our roads.



## Driving successful collaboration: the UAE experience

The UAE's achievement of halving road traffic deaths is an outlier in terms of regional and global performance. This has been enabled through comprehensive governance arrangements. The Federal Traffic Council (FTC), which sits under the Ministry of Interior, acts as the UAE's primary decision-making body for road safety policy.

It comprises representatives from all seven emirates and road safety partners in:



### Setting national road safety standards and regulations:

This ensures consistency across the emirates and eliminates potential confusion for drivers.



### Coordinating traffic safety initiatives:

The FTC facilitates collaboration between federal and emirate-level traffic authorities, promoting resource sharing and targeted programmes.



### Monitoring and evaluating road safety measures:

The council tracks traffic accident data and analyses the effectiveness of implemented strategies. This data-driven approach allows for continuous improvement and adaptation of road safety measures.

In recognition of the federal structure of the UAE, the FTC is supported by emirate-level governance bodies. For example, the Joint Committee for Traffic Safety in Abu Dhabi is chaired by the Department of Municipalities and Transport (DMT), and includes representatives from Abu Dhabi Police, the Department of Health, and the Integrated Transport Centre (ITC). This committee works on initiatives to improve road safety across the UAE capital, aligning with the wider national road safety goals set by the FTC.



## Framework for reducing road traffic deaths

The global plan for the 2021–2030 Decade of Action on Road Safety<sup>24</sup> calls on governments to implement the Safe Systems Approach. This is an integral element of Vision Zero – a global strategy that has at its centre an ambition to reduce road deaths to zero.



### The Safe System Approach provides a framework for delivering Vision Zero

#### It assumes that:

- Road traffic deaths are preventable
- It is possible to mitigate against human error

#### It provides:

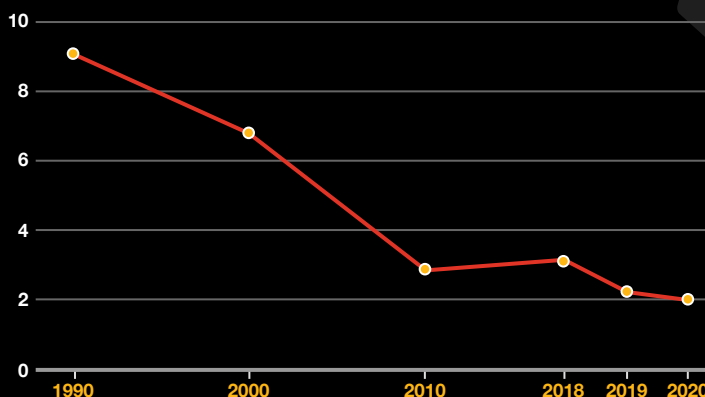
- A coordinated response
- Prevention (safety) culture

There is strong evidence that this offers the most effective way forward. Research from WRI Ross Center for Sustainable Cities and the Global Road Safety Facility of the World Bank conducted analysis in 53 countries and found that those that have taken a Safe System-based approach have achieved both the lowest rates of fatalities per 100,000 inhabitants and the greatest reduction in fatality levels over the past 20 years<sup>25</sup>.



### Case study: Sweden's Vision Zero

Deaths per 100 thousand population in **Sweden**



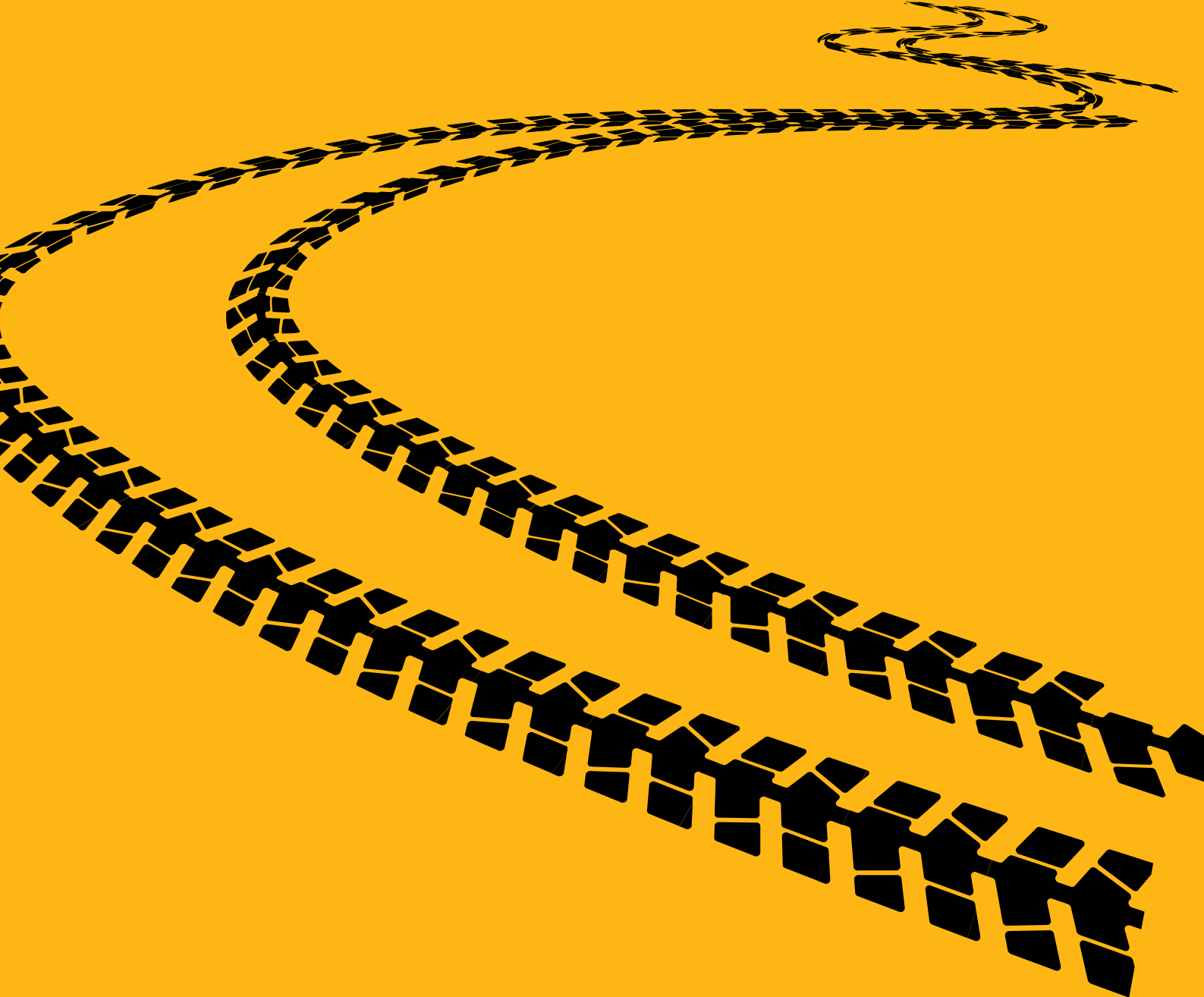
Sweden adopted Vision Zero in 1997 – the first country to do so. It sought to deliver this through:

- Innovative road designs
- Improved vehicle safety standards
- Comprehensive awareness campaigns

The approach contributed to a notable and sustained reduction in road fatalities and injuries.

Source: Road Safety Report 2021, Sweden, OECD<sup>26</sup>





## Partnerships

# Partnerships



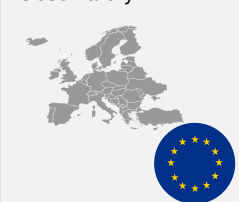


The Safe System Approach has proven effective in driving improvements in road safety, with a core component being collaboration among stakeholders across the road safety ecosystem. However, inter-agency collaboration remains an important challenge, as different parties may need to prioritise road safety over other responsibilities and potentially combine or enhance their authority within a partnership structure.

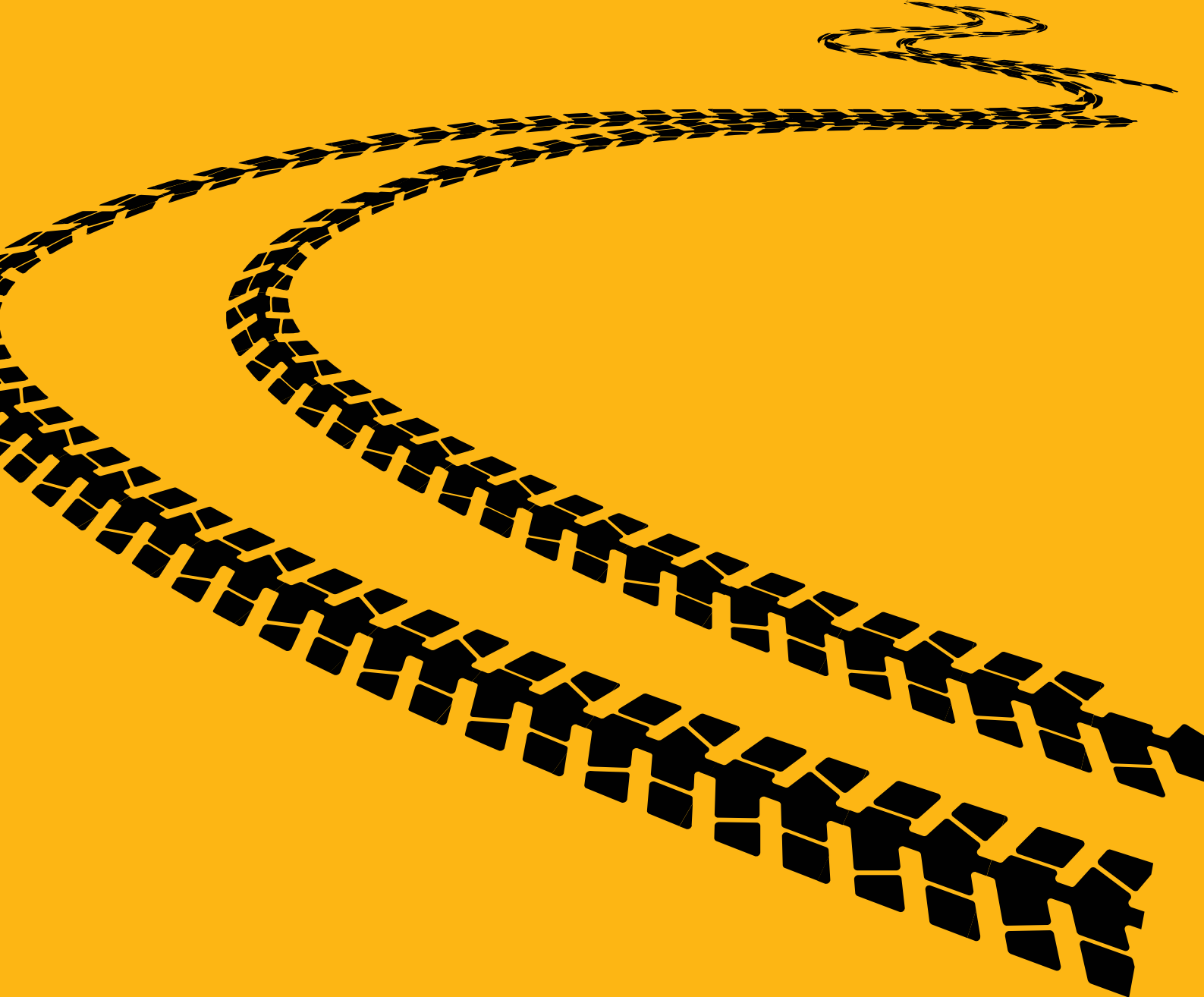
The key question then becomes: What enables and activates the type of inter-agency collaboration necessary to ensure the success of the Safe System Approach in achieving road safety goals?

Success depends on a high-functioning partnership structure that can provide leadership, pool resources, align efforts, and learn from the results. At the heart of our approach is the ALI(i)GN framework: a method for policymakers to evaluate and build road safety governance. This framework promotes structured leadership and strategic governance in road safety as it directs policymakers through critical components such as advocacy, leadership, stakeholder collaboration, and informed decision-making, while encouraging the use of international best practices. The World Bank further supports this by providing guidance on the institutional management functions necessary to build capacity in countries<sup>27</sup>.

The following table highlights each pillar of the ALI(i)GN framework and its alignment with the World Bank Institutional Management Function and leading international practices. Different countries have taken varying routes – but all with the same destination in mind. These can serve as inspiration when considering the characteristics of the framework and adapting it for your jurisdiction.

## Key pillars of the ALI(i)GN framework in application

	Advocate	Lead	Inform (Innovate)	Gauge	Nurture
About	Make the case for road safety and any arrangements necessary to deliver a safety culture.	Develop a road safety strategy that captures the ambition of Vision Zero, supported by clear goals that capture the contributions of all partner agencies needed to deliver on it.	Draw on evidence to inform decisions and identify and test innovations. Consider partnerships with academia to increase capacity in this.	Have robust data management arrangements that diagnose issues and evaluate interventions. Consider deploying data analytics to support analysis.	Develop and maintain a broad road safety ecosystem with a clear process for resourcing structures and initiatives.
Element of World Bank road safety management	Promote legislation and regulation	Results focus	Research, development, and knowledge transfer	Monitoring and evaluation	Funding and resource allocation
Leading practice	<p><b>Sweden</b> Vision Zero</p>  <ul style="list-style-type: none"> <li>– Advocating for the belief that no loss of life on the roads is acceptable.</li> <li>– In 1997, the Swedish Parliament passed a Road Traffic Safety Bill that enshrined Vision Zero into Swedish law. This bill set an ultimate target of no deaths or serious injuries on Sweden's roads<sup>28</sup>.</li> </ul>	<p><b>Netherlands</b> Sustainable Safety Strategy</p>  <ul style="list-style-type: none"> <li>– Adopted a proactive vision to reduce road traffic fatalities in the 1990s.</li> <li>– Based on five principles: road functionality, biomechanical, psychological, responsibility, and learning and innovating<sup>29</sup>.</li> </ul>	<p><b>European Union</b> European Road Safety Observatory</p>  <ul style="list-style-type: none"> <li>– Provides reliable and comparable data on road crashes.</li> <li>– Platform of knowledge sharing to enhance road safety, offering policies, research, reports, and more.</li> <li>– Useful resources and tools, including road safety atlas, KPIs, thematic reports, and country profiles<sup>30</sup>.</li> </ul>	<p><b>USA</b> Fatalities Analysis Reporting System</p>  <ul style="list-style-type: none"> <li>– Federal agency within the US Department of Transportation.</li> <li>– Works with various stakeholders in the collection and analysis of data.</li> <li>– It measures road safety by collecting and analysing crash data<sup>31</sup>.</li> </ul>	<p><b>New Zealand</b> Strategic Resource Allocation system and investment monitoring</p>  <ul style="list-style-type: none"> <li>– Robust system of investment allocation and evaluation.</li> <li>– Periodic reports are published to assess investment priorities and challenges.</li> <li>– Inclusive approach to assess effective execution of strategy among stakeholders and address gaps to overcome in the future<sup>32</sup>.</li> </ul>



## Governance Structures

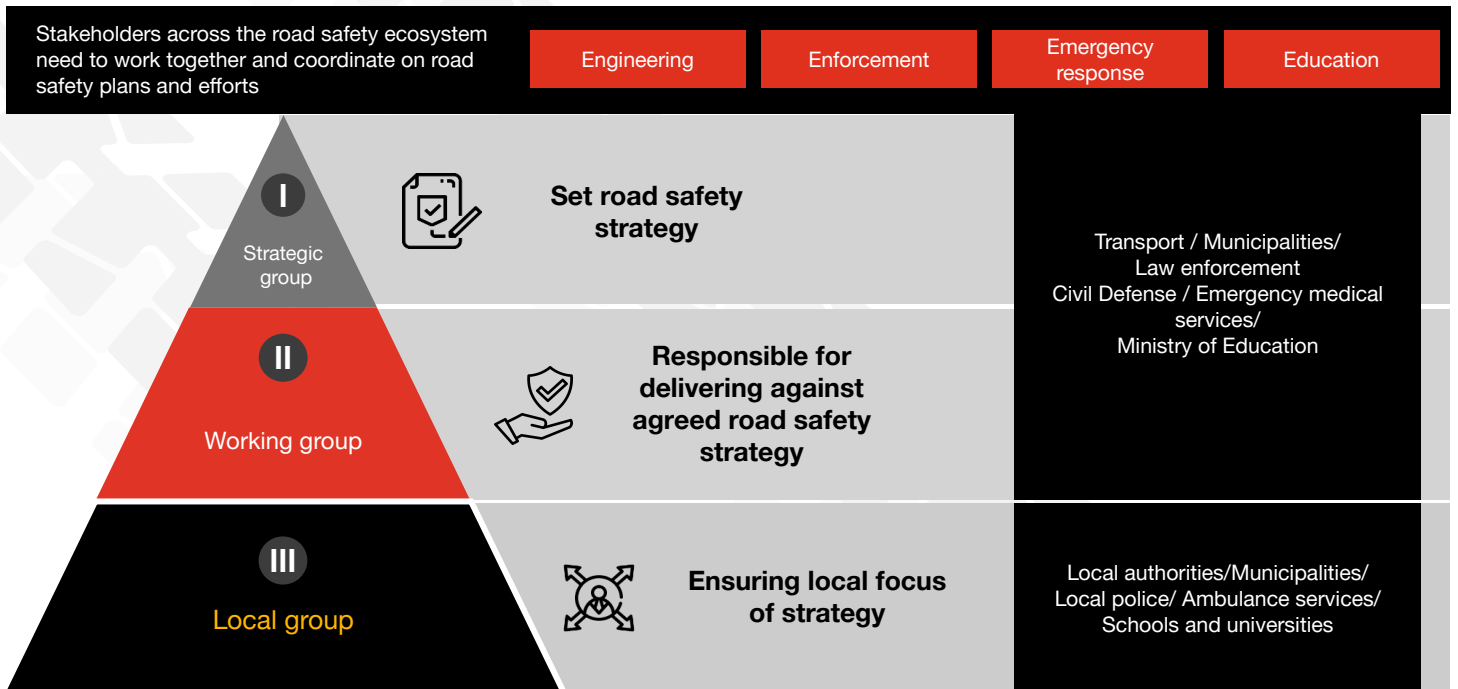


# Governance Structures



Implementing and operating the ALI(i)GN framework requires the development of effective governance structures providing clarity around where the leadership for the road safety agenda sits.

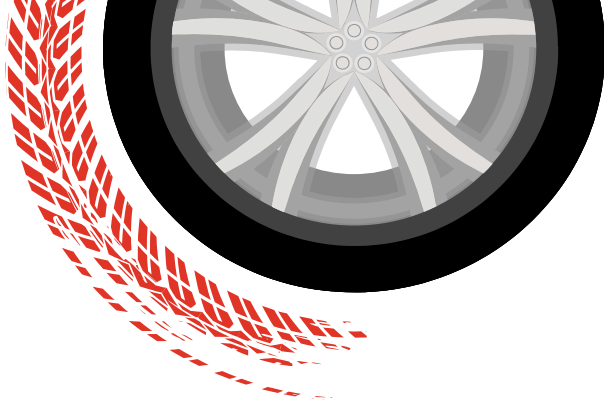
The World Bank champions a lead agency to guide national road safety efforts, with a focus on being able to lead and coordinate action across the road safety ecosystem. Typically, this role is filled by the ministry responsible for transport, and operates through a committee structure chaired by the lead agency that brings together all road safety players.









This committee approach can be effective in fostering collaboration, increasing responsiveness to emerging issues, and maintaining buy-in from partner agencies. Road safety issues typically cut across multiple mandates and can only be addressed effectively when all relevant stakeholders come together to analyse problems, conduct root-cause analyses, and formulate new solutions. However, challenges can arise, including unclear accountability, limited authority due to reliance on member organisations, and potential conflicts when coordinating activities. Some jurisdictions have mitigated these challenges by establishing a dedicated agency to institutionalise the key functions necessary for delivering on road safety initiatives.

A recent example is in Australia, with its Review of National Road Safety Governance and recommendations including a new Office of Road Safety “to assume an increased leadership role by driving greater consideration of road safety issues in road infrastructure investment; ensuring that the Safe System pillars are considered equally; and making sure that decision-makers remain focused on significantly reducing trauma<sup>33</sup>.”

## Roles of road safety agencies



	  <b>Coordinator</b>	  <b>Coordinator and planner</b>	  <b>Coordinator, planner and implementer</b>
<b>Overview</b>	<ul style="list-style-type: none"> <li>Office of Road Safety</li> <li>Sits within Dept. of Infrastructure, Transport, Regional Dev. &amp; Comms</li> <li>Established 2019</li> </ul>	<ul style="list-style-type: none"> <li>Danish Road Safety Commission</li> <li>Reports to Ministry of Transport</li> <li>Established 1986</li> </ul>	<ul style="list-style-type: none"> <li>Road Safety Authority</li> <li>Reports to Department of Transport</li> <li>Established 2006</li> </ul>
<b>Main functions</b>	<ul style="list-style-type: none"> <li>Coordinates delivery of the National Road Safety Strategy</li> <li>Advises Australian government ministers on road-related matters</li> <li>Analyses research and data to inform road safety development</li> </ul>	<p>In addition to coordinator activities:</p> <ul style="list-style-type: none"> <li>Assists in formulation of Road Safety Strategy</li> <li>Monitors development of road safety stakeholders' targets</li> </ul>	<p>In addition to coordinator and planner activities:</p> <ul style="list-style-type: none"> <li>Leads Road Safety strategy development</li> <li>Holds stakeholders accountable for performance</li> <li>Conducts vehicle and driver testing</li> </ul>
<b>Progress</b>	N/A – Recently established office	<ul style="list-style-type: none"> <li>Since taking a lead role in the 2013 Road Safety Strategy, road fatalities have decreased by ~15%</li> </ul>	<ul style="list-style-type: none"> <li>Committed to reduce fatalities by 50% in 2050</li> <li>Since 2009, road fatalities reduced by ~40%</li> </ul>

Any governance arrangements need to be sensitive to the context in which they are being applied. There is a case for relying on committee structures which can be effective, but similarly governments may wish to consider whether there is merit in institutionalising some functions into a special agency.

Ultimately, any arrangements must comply with the ALI(i)GN framework, with governments deciding the best way to apply this, including the specifics of authority, funding, and coordination necessary to optimise delivery and achieve the ultimate goal of halving the number of road traffic deaths by 2030.



# Case study: Republic of Ireland Road Safety Authority



Established in **2006**



## Governance

The RSA's governance is strengthened by its direct association with the Minister of Transport and allocation of resources, alongside the dedication of specialised departments beneath it such as:

Road safety, research, and driver education

Driver testing & licensing

Vehicle standards & enforcement

Finance & commercial services

Human resources

Strategy, policy & technology

## Remit

“RSA strives to be a leader in support of Ireland achieving our road safety ambitions and also as a public service provider.”

The authority improved road safety through a number of tasks, including:

- Undertaking certain enforcement activities linked to the commercial transport sector.
- Working with stakeholders to ensure a coordinated response and that our collective resources are used wisely and efficiently.
- Advising the Minister for Transport on road safety policy<sup>34</sup>.

According to the RSA's corporate plan 2022-2025, Ireland achieved the “lowest number of annual road deaths since records began (137 deaths in 2018), and the second lowest number of road deaths in the EU in 2019 (28 deaths per million population).”<sup>35</sup>

The following services have contributed to Irish road safety:

### Driver licensing and testing services

Setting and assessing driving standards, promoting remedial training, and licensing drivers according to entitlement.

**3.05 million** licence holders

### Vehicle testing and road haulage enforcement

Setting standards for vehicles, testing against minimum standards, and support compliance among commercial vehicle drivers and operators and enforcing where necessary.

**2.8 million** interactions annually

### Road user education and training interactions

Educating and protecting road users by improving their knowledge, skills, and behaviours as they move through life.

Over **1 million** educational interactions

### Locations

Providing customers with physical access options when engaging with RSA services.

Over **320** locations



Funding **\$108m**

#### Income

**\$104m**

Generated from providing services in the following areas:

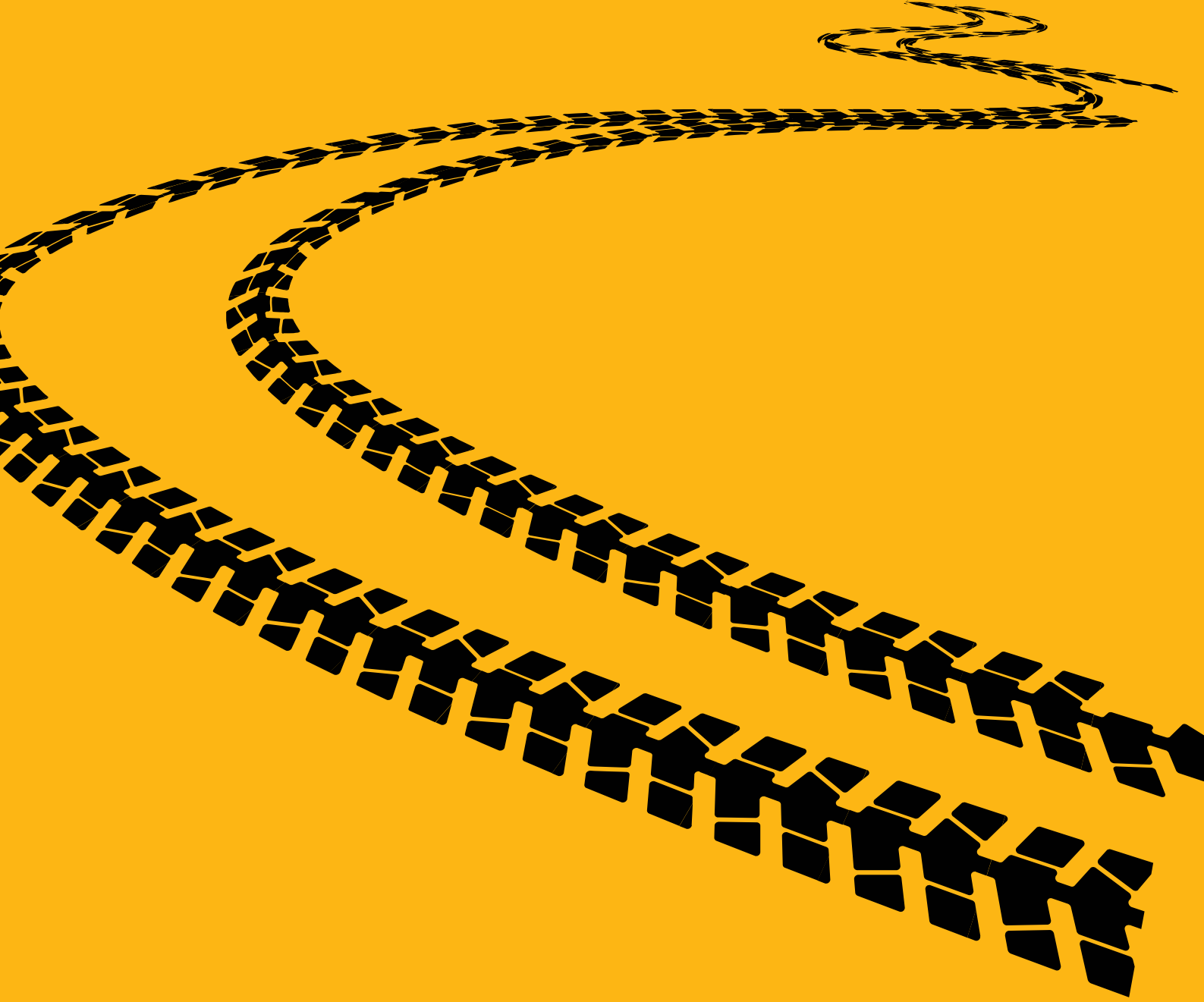
- Testing fees
- Services related to licences
- Digital tachograph

#### Expenditure

**\$48m**

Invested in programmes excluding staff salaries to enhance road safety, including:

- Awareness
- Research and testing
- Operations
- Enhancements to services



The road ahead





## The road ahead



Effective governance arrangements are not just about managing the present. In our rapidly changing, technology-driven world, governments have to look ahead and ensure that they are continually evolving their practices, policies, and structures to keep pace and ensure the safety of their citizens into the future.

Increasingly, autonomous vehicles (AVs) and autonomous vehicle networks are moving from a distant concept to the real-world environment. We are already seeing elements of this on the roads today in many of the safety features available in modern, human-driven cars, and the global market for AV technology is expected to reach \$557 billion by 2026<sup>37</sup>. Studies suggest that once in operation – approximately 2030 – fully automated vehicles will be 76% less likely to be involved in a traffic accident than non-automated vehicles<sup>38</sup>.

Our region is positioned to be at the forefront of this global innovation. For example, in Dubai 9% of the transport network is currently self-driving, with a target of 25% of all transport trips taken to be via an autonomous vehicle by 2030<sup>39</sup>. Trial runs of self-driving taxis have been underway since 2023, with a target to have a fully operational self-driving taxi fleet of 4,000 by 2030<sup>40</sup>.

Saudi Arabia is making significant progress with its own self-driving electric car trials managed by the Ministry for Transport and Logistic Services<sup>41</sup>. Many of its giga-projects, such as NEOM, will heavily rely on AVs to contribute to plans of creating a sustainable, safe, and seamlessly connected mobility system, and contribute towards its Vision 2030 ambitions. And other countries in the GCC, such as Qatar and Bahrain, have their own initiatives in development<sup>42</sup>.

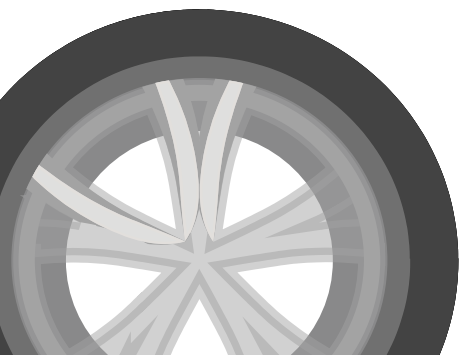
Whilst autonomous vehicles do promise significant safety benefits, especially in mitigating collisions caused by human error, effective collaboration and coordination will be essential to unlocking their full potential. Our ALI(i)GN framework can be expanded to include all key stakeholders of an AV- and AI-powered road safety network, as these factors continue to play an increasing role in contributing to key targets such as Vision Zero.

**Road safety governance structures will be essential in securing the collaboration necessary to ensure that the safety benefits of automated vehicles are realised through:**

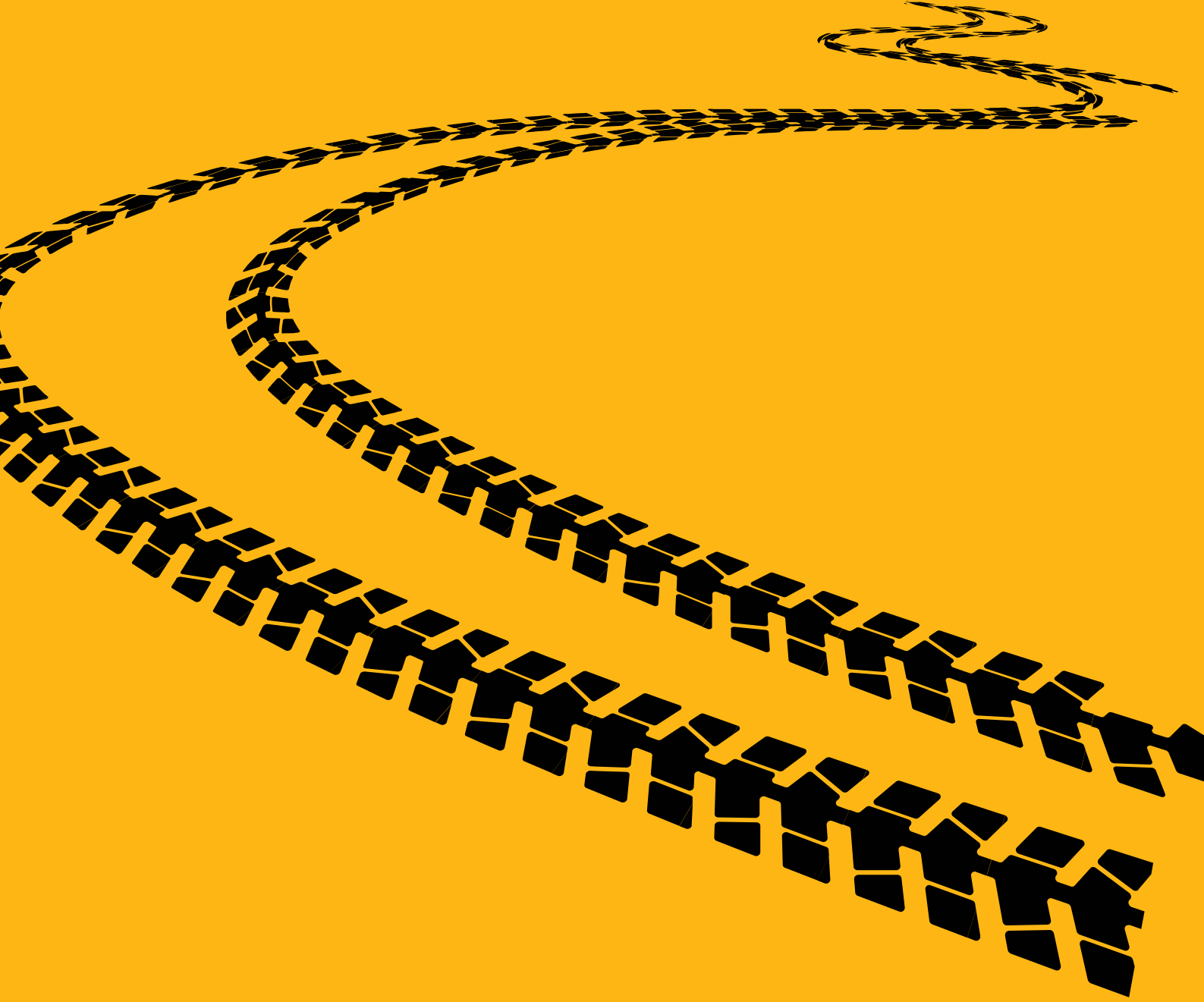
- **Mandating safety by design:** Robust safety standards for AVs will safeguard road users.
- **Building trust through regulation:** Clear regulations and oversight will build public confidence in AV technology.
- **Planning for connected infrastructure:** Infrastructure planning with a view on ensuring AV integration, enhancing overall road safety.
- **Enabling appropriate data sharing:** Policy frameworks ensuring responsible data collection and use by AVs will mitigate privacy concerns.
- **Public education to encourage public acceptance:** Targeted campaigns empowered by effective governance structures will promote a smooth transition with AVs.

Other technological developments, such as AI, are also expected to significantly improve road safety. Recent regional AI innovations for road safety include; the introduction of AI-powered pedestrian crossings with interactive warning systems in accident-prone-areas of Dubai; Qatar's smart traffic lights to reduce congestion and accidents, and prioritise emergency vehicles; and Saudi Arabia's support of innovations such as Hazen.ai to enhance road safety and reduce the risk factors contributing to road traffic accidents<sup>43</sup>.

All of those responsible for improving road safety and reducing road traffic fatalities will need to stay on top of the emerging opportunities – and associated risks – that technological innovation will bring, as they play an increasingly larger role in contributing towards targets such as SDG 3.6<sup>44</sup> and ultimately Vision Zero<sup>45</sup>. Our ALI(i)GN framework can be adapted and expanded as required to encompass these new entrants into the road safety ecosystems of the future.







## Conclusion



## What next?

Reducing road deaths is a critical priority at both global and local levels. It is a key focus in the national visions of regional governments and ranks high on the agenda of global governance bodies like WHO and World Bank, as well as international targets such as the SDGs.

The number of lives lost and negatively impacted as a consequence of a road traffic collision remains too high, and with this comes an almost unbearable burden of social and economic harm. By reducing deaths and injuries, we can unlock human capital and improve overall productivity. Additionally, enhancing safety is crucial for attracting inward investment and tourism, both of which are key to economic diversification efforts across our region.

The ambition of Vision Zero for “no road deaths” remains challenging, and global experience suggests that it will require a concerted effort by all involved to get closer to this than we currently are.

Having a broad, evidence-based strategy is an important first step, but moving that from an ambition to reality requires a sharp and constant focus on implementation.

Our ALI(i)GN framework will help governments at all levels to design and develop inclusive governance arrangements, and navigate the potential implementation challenges to achieve positive action and impactful change now and into the future.

Governments must place a higher priority on improving road safety, putting together the arrangements necessary to deliver on the UN SDG target of halving road traffic deaths by 2030 through mass adoption of the Safe System Approach.

To do this they should:

- ❑ Use our ALI(i)GN framework to review existing arrangements and identify changes to ensure a connected and empowered road safety ecosystem with clear responsibilities and goals.
- ❑ Support any governance arrangements with a clear roadmap for improving road safety using the Safe System Approach, setting actionable and measurable interim targets through to 2030.
- ❑ Actively monitor and engage with the emerging opportunities and risks of technological innovations and developments impacting the future of road safety.

Only by working together collectively, as a unified ecosystem, can we create a meaningful and lasting impact, and drive action to reduce road traffic deaths.



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# Authors



## Andrew Morley

Policing and Public Safety  
Practice Leader,  
PwC Middle East

T: +971 50 111 8406  
E: andrew.morley@pwc.com



## Sarah Salman

Policing and Public Safety,  
PwC Middle East

T: +971 56 506 3152  
E: sarah.s.salman@pwc.com

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## Muhannad Al-Qadoumi

Strategy and Transformation  
Leader, Government & Public  
Sector Consulting, PwC Middle  
East

T: +971 50 900 9516  
E: muhannad.alqadoumi@pwc.com



## Ismail Dalli

Public Safety and Justice Partner,  
Government & Public Sector  
Consulting, PwC Middle East

T: +971 2 694 6800  
E: ismail.dalli@pwc.com



## Andrew Morley

Policing and Public Safety Practice  
Leader, Government & Public Sector  
Consulting, PwC Middle East

T: +971 50111 8406  
E: andrew.morley@pwc.com

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